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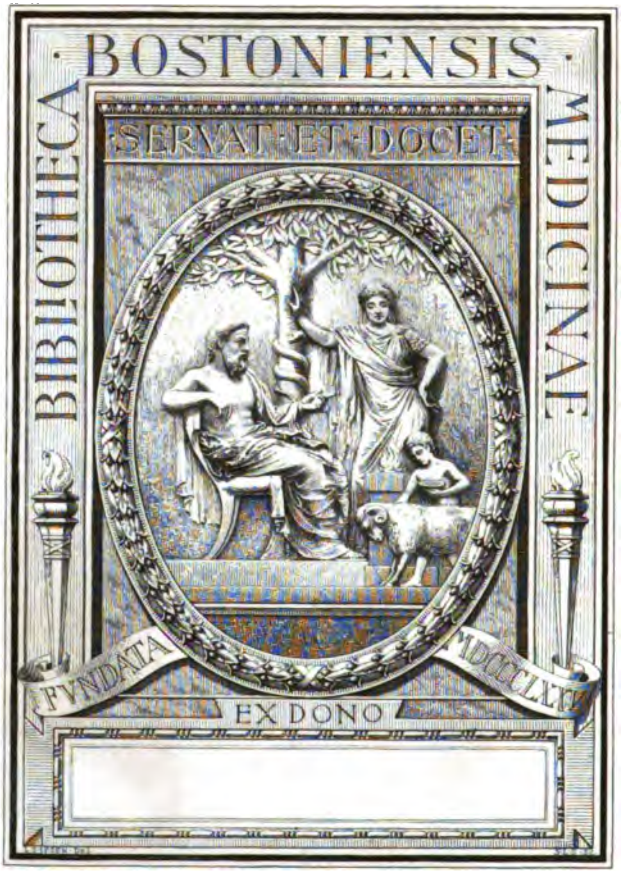
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AUTHORS.

PAGE

Amberg, Emil, 252, 494
Anderson, Willis S., 31, 84, 105, 134, 180, 268, 318, 369, 410, 460, 511, 557
Arneill, James Rae, 110
Aronson, Edward A., 549
Bodine, John A., 223, 255, 256, 257, 502, 505, 547
Boynton, Frances Nichols, 10
Breakey, William F., 33, 86, 181, 412, 416, 462, 513, 559
Burke, George F., 541
Butterfield, Elmore E., 529
Carrow, Flemming, 97
Carstens, J. Henry, 155
Cattermole, George H., 542
Connor, Earle, 545
Cowie, David Murray, 77, 118, 173, 261, 454, 472, 491, 508, 517, 527, 539
Darling, Cyrenus G., 26, 78, 129, 175, 263, 310, 363, 407, 451, 455, 508, 554
Dawbarn, Robert H. M., 506
Dillingham, Frederick H., 127
Dock, George, 1, 24, 60, 128, 285, 296, 308, 332, 362, 396, 405, 480, 507, 552
Dougherty, Daniel S., 549
Eckstein, William G., 500
Edwards, William M., 35, 87, 135, 320, 413, 464, 514, 561
Elmer, Warren P., 166
Fischer, Arthur F., 351
Fox, Ralph D., 163
Franklin, Milton, 499
Freer, Otto T., 49
Gibbes, Heneage, 152
Goffe, J. Riddle, 172, 253
Goux, Louis J., 149
Hayes, William Van V., 167, 168
Herdman, William J., 241
Holmes, Arthur David, 29, 82, 266, 316, 365, 409, 458
Holmes, Bayard, 534

PAGE

Huber, G. Carl, 481
Inglis, David, 36, 210, 371, 466
Jeffries, Ferdinand M., 127
Keyes, Jr., Edward L., 170
Kohn, Albert, 76, 172
Lambert, Robert E., 221
Loree, Dean I., 250
Lynch, Charles J., 72, 124
Lynch, Jerome M., 222
Manges, Morris, 74, 76, 172
McAuliffe, George B., 218, 224, 548
McGee, Harry Stowe, 516, 556
Morley, William H., 81, 179, 264
Neff, Irwin H., 385
North, John, 433
O'Brien, Frank A., 289
Osborn, Samuel, 164
Packard, Maurice, 123
Parker, Delos Leonard, 37, 89, 136, 182, 270, 321, 414, 467, 516, 563
Parker, Walter Robert, 30, 83, 133, 317, 366
Patton, Charles Lanphier, 27, 79, 312, 408, 457, 555
Pedersen, Victor C., 70
Peterson, Reuben, 18, 130, 177, 183
Pritchard, William B., 73
Pryor, William R., 258
Quinlan, Francis J., 550
Reed, Arthur P., 28, 131, 315
Reich, Adolph, 546
Shurly, Ernest L., 64
Sinclair, Daniel A., 506, 551
Townsend, Wisner R., 254, 255
Tuttle, James P., 169
Vaughan, Victor C., 193, 440
Walker, Frank B., 145
Warthin, Aldred Scott, 39, 127, 271, 322, 337, 564
Wells, Brooks H., 124
Wessinger, John A., 448
Whitman, Royal, 121
Wyman, Hal C., 403, 537

ARTICLES.

A

Abdomen, should the normal appendix be removed when the is opened for other reasons? 554.

Abscess, deep, of the neck, caries of temporal bone, with, 494.

Adeniod forceps, 552.

Adenoids in infants, 512.

Air passages, upper, malignant growths of the, 460.

Albumoses in the urine, some observations on, 166.

Alcohol and tobacco poisoning, inflammation of the optic nerve due to, 545.

Altitude, high, special influences of the, on the nose and throat, 134.

Amebic dysentery, trichomonas intestinalis, anchylostomum duodenale and trichocephalus dispar in the same patient, 164.

Amyloid disease, the pancreas in, 529.

Anatomy, pathological, of paratyphoid fever, 137.

Anchylostomum duodenale, and amebic dysentery, trichomonas intestinalis and trichocephalus dispar in the same patient, 164.

Anemia in children, treatment of, by iron vitellin, 459.

Anesthesia, cocain, radical operation for hernia under, 505.

Aneurysm with unusual collateral venous circulation, 74.

Angina, Vincent's, 511.

  Vincent's, and stomatitis, report of a case of, 411.

Ankylosis, unilateral, of the jaw, 257.

Ann Arbor Medical Club, 158, 225.

Antiseptic treatment of typhoid fever, 321.

Antiseptics, intestinal, their uses and limitations, 37.

Antitoxin injections, streptococcus and tetanus, the present status of, 193.

Appendicalgia, 177.

Appendicitis, two thousand operations for, with deductions from personal experience, 310.

Appendix (appendicalgia), pains originating in the, 177.

  should the normal be removed when the abdomen is opened for other reasons? 554.

  the relation of the, to pelvic disease, 312.

Arm and forearm, cellulitis involving the, report of a case of, 250.

Aspiration of the cerebrospinal fluid, tetanus treated by, 364.

Astigmatic eyes, when not to prescribe cylinders for, and when to prescribe them for nonastigmatic eyes, 83.

Atrophic gastritis, 168.

Aural affections, the dependence of, upon the nose and throat, 269.

  canal, exostoses of the, 224.

B

Bacilli, the bacillus typhosus and allied, recent facts concerning, 261.

  tubercle, human and bovine, experiments with tuberculin made from, 454.

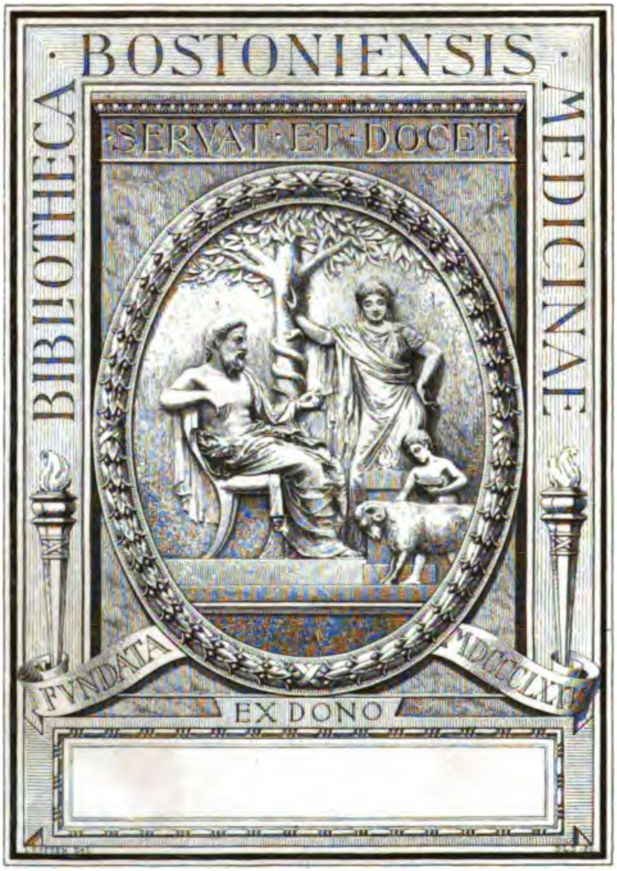
Bacillus dysenteriæ in infants, a clinical study of sixty-two cases of, 365.

  pyocyaneus, a case of infection with, with the primary focus in decubitus and with special reference to the hemolytic action of the organism, 10.

Bacillus typhosus and allied bacilli, recent facts concerning the, 261.
Bacterial toxins, intracellular, further studies of the, 440.
Biliary and hepatic surgery, remarks on, 403.
Bladder, dilatation of the, 492.
Blastomycosis of the ocular structures, especially of the eyelids, 133.
Blindness, transient monocular, 366.
Blood, circulating, mitosis in, 1.
  of pneumonia patients, the occurrence of pneumococci in the, a brief resume of recent observations on the, 173.
  pressure and pulse rate, 508.
Bone, temporal, caries of, with deep abscess of the neck, 494.
Breast, a rare case, illustrating a teaching of Doctor Syme of Scotland, 506.
Bronchial tree, cast of a, 127.

C

Caesarean section from a modern standpoint, 81.
  section, vaginal, in placenta previa, 266.
Calculi, vesical, 170.
Calculus, cystin, 172.
  renal, 172.
Canal, aural, exostoses of the, 224.
Cancer of the uterus, operation of choice in, 409.
Carcinoma uteri, treatment of incurable, 79.
Caries of temporal bone, with deep abscess of the neck, 494.
Cartilaginous structure of the ear, degeneration of the, 224.
Cast of a bronchial tree, 127.
Cattle, parasitic sycosis communicated from, 559.
Cavity, oral, methods of controlling hemorrhages of the, 180.
  orbital, epithelioma of the, 221.
Cellulitis following infection of the finger, 163.
Cellulitis involving the arm and forearm, report of a case of, 250.
Cerebral lesions due to uremia, 466.
Cerebrospinal fluid and injection of morphin-eucain and salt solution, a case of tetanus treated by aspiration of the, 364.
Cervical ribs, bilateral, 549.
Chickenpox concurrent with smallpox, 128, 268.
Child, undescended testes in a, 506.
Children, chronic myocarditis in, 267.
  hernia in young, 129.
  new-born, the use of silver nitrate in the eyes of, 179.
  the treatment of anemia in, by iron vitellin, 459.
  weak-minded, care of, 320.
Chlorom, ueber das, 271.
Chloroma, a case of, with clinical history and account of postmortem appearances, 273.
Cleft palate, operation for, 547.
Clinic of Doctor J. Babinski, observations made in the, 87.
Clinical Society of the Hospital of the University of Michigan, 163.
  Society of the New York Polyclinic Medical School and Hospital, 70, 121, 167, 218, 253, 499, 545.
Colitis, mucous membrane, the treatment of, by colostomy, 456.
Colostomy, the treatment of mucous membrane colitis by, 456.
Condyle of the humerus, fracture of the, derformity following, 256.
Cough, hysterical, 255.
Croup due to staphylococcus, 552.
Culture, physical, 29.
Curettage, acute thyroidism, following, 124.
Cyst, dermoid, 169.
  ovarian, a gigantic, 457.
Cystin calculus, 172.
Cystitis, 145.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Fracture, Colles' radiograph of incomplete, 223.
  of the base of the skull, 255.
  of the condyle of the humerus, deformity following, 256.
  of the neck of the femur, a new method of treatment for, 121.
Fractured patella, treatment of, 508.
Frothingham, George Edward, 97.
Fungoides, mycosis, the x-ray treatment of 412.

G

Gall-bladder, stones in, duodenal ulcer caused by pressure from, 542.
Gall-stone disease, the causes of occasional failure to cure, 78.
  ileus, 76.
Gangrene following the use of stovaine, 551.
Gastric ulcer, perforating, 223.
Gastritis, atrophic, 168.
  ozena (atrophic fetid rhinitis) a cause of, 513.
Gastroptosis, 167.
Glaucoma, primary, the ultimate results of iridectomy for, 368.
Gonorrhea during the puerperium, 264.
Gynecology and headache, 155.

H

Hand, surgery of the, remarks on, 537.
Headache and gynecology, 155.
  from nonsuppurative inflammation of the accessory sinuses of the nose, 270.
Heart, penetrating wounds of the, treatment of, 407.
Hematom-mole: its clinical and pathological characteristics and relations to early hydramnios, 556.
Hematoma, intrapelvic, following labor not associated with lesions of the uterus, 510.
Hemiplegics, respiratory action in, 35.
Hemolytic action of the organism, special reference to the, a case of infection with bacillus pyocyaneus with the primary focus in decubitus and with, 10.
Hemorrhages of the oral cavity, methods of controlling, 180.
Hemorrhagica, herpes zoster, (trigeminal), 491.
Hepatic and biliary surgery, remarks on, 403.
Hernia in young children, 129.
  radical operation for, under cocain anesthesia, 505.
Herpes zoster hemorrhagica (trigeminal), 491.
Humerus, fracture of the condyle of the, deformity following, 256.
  luxations of the, simple method for the reduction of, 263.
Hydramnios, the clinical and pathological characterists and relations of the hematom-mole to early, 556.
Hydrastis, some of its therapeutic uses, 563.
Hydrocephalus, chronic internal, treatment of, by lumbar puncture, 363.
Hyperplasia of the pharyngeal tonsil, etiology of, 269.
Hypertrophic tuberculosis of the larynx, 318.
Hysterical cough, 255.

I

Ileus, gall-stone, 76.
Infants, adenoids in, 512.
  care of premature, 459.
  the bacillus dysenteriæ in, a clinical study of sixty-two cases of intestinal infection by, 365.
Infection, intestinal, by the bacillus dysenteriæ in infants, a clinical study of sixty-two cases of, 365.
  of the finger, cellulitis following, 163.
  of tuberculosis, the mode of, 208.

Infection with bacillus pyocyaneus, a case of, with the primary focus in decubitis and with special reference to the hemolytic action of the organism, 10.

Inflammation, nonsuppurative, of the accessory sinuses of the nose, headache from, 270.
  of the lungs and pleura, chronic nontuberculous, the treatment of, 64.
  of the optic nerve due to alcohol and tobacco poisoning, 545.
  pelvic, from the standpoint of the general practitioner, 18.

Inflammatory conditions, acute, electricity in, 467.

Injection of morphin-eucain and salt solution, a case of tetanus treated by aspiration of the cerebrospinal fluid and, 364.

Injections, antitoxin, the present status of streptococcus and tetanus, 193.
  subconjunctival, in ophthalmic therapeutics, the present status of, 30.

Injuries to the rectum caused by gynecologic examinations, 555.

Insane, general paralysis of the, 72.
  intracranial tumors in the, with a report of two cases, 385.

Insanity, means for allaying excitement in, 135.
  some medicolegal aspects of, 561.
  the present campaign against, 241.
  therapeutics of, 270.

Intestinal antiseptics, their uses and limitations, 37.
  infection by the bacillus dysenteriæ in infants, clinical study of sixty-two cases of, 365.
  paresis, postoperative, 457.

Intestine, punctured, postmortem specimens of, 502.

Intracranial tumors in the insane, with a report on two cases, 385.

Intubation, thyrotomy and tracheotomy for laryngeal stenosis from posttyphoid perichondritis, 319.

Inversion uteri puerperalis, a case of, reduced by a modified Kuestner's method, 28.

Iridectomy for primary glaucoma, the ultimate results of, 368.

Ischuria, etiology of the, in retroflexion of the gravid uterus, 131.

J

Jaw, ankylosis of the, unilateral, 257.

K

Kidneys and liver, displaced, 76.

L

Laboratory work for the general practitioner, 110.

Labor not associated with lesions of the uterus, intrapelvic hematoma following, 510.

Lacerations, pelvic floor, preventive treatment of, 315.

Laparotomies, ideal, advantages of the short incision in, 534.

Laryngeal stenosis from posttyphoid perichondritis, tracheotomy, thyrotomy, intubation, 319.

Laryngitis, nonspecific, chronic, 558.

Larynx, a congenital diaphragm in the, report of two cases of, 180.
  compression of, due to sarcoma, 550.
  hypertrophic tuberculosis of the, 318.
  malignant disease of the, 558.
  ulcers of the, 548.

Leprosy, 127.

Lesions, cerebral, due to uremia, 466.
  ocular, caused by lightning stroke, 317.
  of the uterus, intrapelvic hematoma following labor not associated with, 510.

Leukanemia, 24.
Leukemia, x-ray treatment of, 362.
Ligament, round, of the uterus, fibroma of the intraabdominal portion of the, 130.
Lightning stroke, ocular lesions caused by, 317.
Liver and kidneys, displaced, 76.
Lumbar puncture, treatment of chronic internal hydrocephalus by, 363.
Lung and pleura, primary endothelioma of the, 123.
Lungs, acute edema of the, secondary to ether narcosis, 70.
  and pleura, the treatment of chronic nontuberculous inflammation of the, 64.

M

Malignant growths of the upper air passages, 460.
Mastoid operation, a new retractor for, 252.
Mastoiditis, operation for, 548, 551.
Medical ethics, Stoll on, 60.
MEDICAL NEWS:
  A disciple of hypnotism, 186.
  A distinguished visitor, 186.
  A medical meeting at Ann Arbor, 239.
  A movement to erect a memorial, 568.
  A rare treat, 569.
  Arrested for violation of injunction, 525.
  Eat to live, or live to eat? 140.
  Extinction of the black race, 44.
  Future provision for the insane, 422.
  Hackley hospital, 569.
  Minor intelligence, 45, 94, 140, 186, 240, 278, 327, 380, 425, 476, 525, 574.
  Nomenclature for pulmonary tuberculosis, 277.
  Probable successor to Professor Osler, 568.
  Recently created doctors, 379.
  The Grand Rapids medical meeting, 276.
MEDICAL NEWS:
  The Mississippi Valley Medical Association, 476.
Medicine, the relation of the Catholic church to, 289.
Membrane, mucous, and skin diseases, 513.
Menstruation, the physiological function of, and the part played therein by the Fallopian tubes, 253.
Methylene blue, the diagnostic and therapeutic value of, 89.
Mitosis in circulating blood, 1.
Mucous membrane and skin diseases, 462.
Multiforme, erythema, 86.
Muscle and nerve affections, what light does our recent knowledge of tetanus throw on other, 210.
Mycosis fungoides, the x-ray treatment of, 412.
Mydriatics, refraction and the use of, 149.
Myocarditis, chronic, in children, 267.
Myoma, operation in, on the choice of, 408.
Myositis ossificans, 255.

N

Narcosis, ether, acute edema of the lungs secondary to, 70.
Nasal operations, preparation and after treatment in, 370.
  origin, neuroses of, 410.
  polypi, the etiology of, 371.
  septum, resection of the, for correction of deflections, 105.
  septum, submucous resection of the, 268.
Nasopharyngitis, lithemic, due to systemic disturbances, 557.
Neck, deep abscess of the, with caries of temporal bone, 494.
  of the femur, treatment for fracture of the, a new method of, 121.
Neonatorum, pemphigus, sive contagiosus, 265.

Nephritis, acute, tonsillitis a cause of, 410.
  theocin in the treatment of, 546.
Nerve and muscle affections, what light does our recent knowledge throw on other, 210.
  optic, inflammation of the, due to alcohol and tobacco poisoning, 545.
Nervous shock, delirium from, 464.
Neuroses of nasal origin, 410.
Nose and throat, special influences of the high altitude on the, 134.
  and throat, the dependence of aural affections upon the, 269.
  sinuses of the, 84.
  the accessory sinuses of the, headache from nonsuppurative inflammation of, 270.

O

OBITUARIES:
  Alexander, Hamill M, 45.
  Andrews, Edmund, 93.
  Bartholow, Roberts, 239.
  Davis, Nathan Smith, 326.
  de Schweinitz, E. A. 143.
  Dunn, James Henry, 429.
  Finsen, Niels, 475.
  Herrick, C. L. 477.
  His, Wilhelm, 277.
  Lambert, Edward W., 478.
  Parker, Leonard Brooks, 327.
  Pryor, William Rhys, 431.
  Simon, John, 479.
  Unsworth, Noel, 382.
  Warren, William Matthew, 45.
Ocular lesions caused by lightning stroke, 317.
  structures, blastomycosis of the, especially of the eyelids, 133.
Omentum and stomach, two cases of accessory pancreas, 337.
Operation, Alexander, sterility depending upon retrodisplaced uteri, and their relief by the, 555.
  for cleft palate, 547.
  for mastoiditis, 548, 551.
  in myoma, on the choice of, 408.
  mastoid, a new retractor for, 252.
Operation of choice in cancer of the uterus, 409.
  open, for correction of deformity and restoration of function in ancient Colles' fracture, 502.
  radical, for hernia under cocain anesthesia, 505.
Operations, nasal, preparation and after treatment in, 370.
  two thousand, for appendicitis, with deductions from personal experience, 310.
Ophthalmic therapeutics, subconjunctival injections in, the present status of, 30.
Optic nerve, inflammation of the, due to alcohol and tobacco poisoning, 545.
Oral cavity, hemorrhages of the, methods of controlling, 180.
Orbital cavity, epithelioma of the, 221.
Organism, a new pathogenic throat, 411.
Ossificans, myositis, 255.
Ovarian cyst, a gigantic, 457.
Ovaries and uterus, should they be removed in operating for double pyosalpinx? 27.
Ozena (atrophic fetid rhinitis) a cause of gastritis, 513.

P

Pains originating in the appendix (appendicalgia), 177.
Palate, cleft, operation for, 547.
  hard, pipe smokers' ulcer of the, 319.
Pancreas in amyloid disease, 529.
  (omentum and stomach), accessory, two cases of, 337.
Paralysis, general, of the insane, 72.
Parasitic sycosis communicated from cattle, 559.
Paresis, general, 413.
  postoperative intestinal, 457.
Patella, fractured, treatment of, 508.
Pathogenic throat organism, a new, 411.

Pathological anatomy of paratyphoid fever, 137.
Pathology, the study of, 396.
Pelvic disease, the relation of the appendix to, 312.
  floor lacerations, the preventive treatment of, 315.
  inflammation, from the standpoint of the general practitioner, 18.
Pemphigus neonatorum sive contagiosus, 265.
Perichondritis, posttyphoid, tracheotomy, thyrotomy, intubation, laryngeal stenosis from, 319.
Periosteitis, syphilitic, 254.
Periosteum, regeneration of the radius from its, 257.
Petroleum, crude, as a therapeutic agent, thirty years experience with, 182.
Pharyngeal tonsil, hyperplasia of the, etiology of, 269.
Physical culture, 29.
Placenta previa, vaginal Caesarean section in, 266.
  retained, manual removal of, without rubber gloves, 265.
Pleura and lung, primary endothelioma of the, 123.
  and lungs, the treatment of chronic nontuberculous inflammation of the, 64.
Pneumococci in the blood of pneumonia patients, a brief résumé of recent observations on the occurrence of, 173.
Pneumococcus endocarditis, 553.
Pneumonia, diagnosis and drug treatment of, 316.
  patients, the occurrence of pneumococci in the blood of, a brief résumé of recent observations on, 173.
  treatment of, 77.
Pneumothorax, 458.
Poisoning, alcohol and tobacco, inflammation of the optic nerve due to, 545.
Polypi, nasal, the etiology of, 371.
Postmortem appearances, case of chloroma with clinical history and account of, 273.
  specimens of punctured intestine, 502.
Psoriasis, accidental multiple vaccination of the face associated with, 539.
Practice and theory of prognosis, 296.
Pregnancy, tetany in, 265.
Prognosis, its theory and practice, 296.
Protozoa, a review of the year's work on, 39.
Pseudoleukemia, or Hodgkin's disease, 500.
Psychopathic wards, pavilions and hospitals for American cities, 514.
Puerperalis, uteri, a case of inversion, reduced by a modified Kuestner's method, 28.
Puerperium, gonorrhea during the, 264.
Pulsations, circumscribed and diffuse, of the wall of the thorax, 405.
Pulse rate and blood pressure, 508.
Puncture, lumbar, treatment of chronic internal hydrocephalus by, 363.
Pyosalpinx, double, should the uterus and ovaries be removed in operating for? 27.

Q

Quinin, substitute for, in the treatment of malarial fever, 136.

R

Radiograph of incomplete Colles' fracture, 223.
Radius, regeneration of the, from its periosteum, 257.
Rectal diseases, and their treatment, 451.
Rectum, injuries to the, caused by gynecologic examinations, 555.
  stricture of the, 222.

Refraction and the use of mydriatics, 149.
Regeneration of the radius from its periosteum, 257.
Renal calculus, 172.
Resection of the nasal septum for correction of reflections, 105.
  submucous, of the nasal septum, 268.
Respiratory action in hemiplegics, 35.
Retroflexion of the gravid uterus, etiology of the ischuria in, 131.
Reviews:
  A dictionary of medical science, 191.
  A manual of clinical diagnosis, 333.
  A manual of dissection and practical anatomy, 336.
  A new clinical chart, 95.
  A practical treatise on medical diagnosis for students and physicians, 480.
  A system of practical surgery, 287.
  A text-book of physiology, 527.
  A text-book of the diseases of women, 48.
  Bacteriology, 288.
  Chronic headache and its treatment by massage, 144.
  Clinical pathology of the blood, 288.
  Disease of the pancreas, its cause and nature, 190.
  Diseases of the pancreas and their surgical treatment, 46.
  Dwight's epitome of toxicology, 575.
  Eye, ear, nose and throat, 192.
  General pathology, 286.
  Gynecological diagnosis, 95.
  International clinics, 285.
  Manual of clinical microscopy and chemistry, 332.
  Medical diagnosis, 334.
  Physical chemistry in the service of the sciences, 143.
  Practice of obstetrics, 47.
  Progressive medicine, 336, 384.
Reviews:
  The A B C of photomicrography, 48.
  The American Journal of Urology, 528.
  The blues, 576.
  The development of the human body, 48.
  The essentials of histology, 144.
  The lymphatics, 192.
  The physician's visiting list for 1905, 576.
  The practical medicine series of year books, 287.
  The phychology of child development, 96.
  The self-cure of consumption without medicine, 576.
  Tuley's epitome of pediatrics, 336.
Rhinitis, chronic, its varities and treatment, 49.
Ribs, cervical, 549.
Rubber gloves, manual removal of retained placenta without, 265.

S

Sager, Abram, A. M., M. D., his life and services, 481.
Sarcoma, compression of larynx due to, 550.
Septum, nasal, resection of the, for correction of deflections, 105.
  nasal, submucous resection of the, 268.
Serum, antistreptococci, in the treatment of scarlet fever and diphtheria, the use of, 409.
Shock, nervous, delirium from, 464.
Sinuses of the nose, 84.
  of the nose, accessory, headache from nonsuppurative inflammation of the, 270.
Skin and mucous membrane diseases, 462, 513.
Skull, the base of the, fracture of, 255.
Smallpox, chickenpox concurrent with, 128, 268.

- Staphylococcus, croup due to, 552.
- Stenosis, laryngeal, from posttyphoid perichondritis, tracheotomy, thyrotomy, intubation, 319.
- Sterility depending upon retrodisplaced uteri, and their relief by the Alexander operation, 555.
- Stoll on medical ethics, 60.
- Stomach, affections of the, the results obtainable by operative measures in, 26.
  - and omentum, two cases of accessory pancreas, 337.
  - fluid, a rapid procedure for the estimation of the peptic value of, by means of the Mett method, 118.
  - ulcer of the, 516.
- Stomatitis, and Vincent's angina, a report of a case of, 411.
- Strabismus, 221.
- Streptococcus and tetanus antitoxin injections, the present status of, 193.
- Stricture of the rectum, 222.
- Surgery, biliary and hepatic, remarks on, 403.
  - contributions to, 175.
  - dental, employment of porcelain in, 541.
  - of the hand, remarks on the, 537.
  - the idea of gross cleanliness in, and its harmful results, 509.
- Sycosis, parasitic, communicated from cattle, 559.
- Syphilitic periosteitis, 254.

T

- Testes, undescended, in a child, 506.
- Tetanus and streptococcus, antitoxin injections, the present status of, 193.
  - in vaccine, 507.
  - treated by aspiration of the cerebrospinal fluid and injection of morphin-eucain and salt solution, 364.
- **Tetanus and streptococcus, what light does our recent knowledge of, throw on other muscle and nerve affections?** 210.
- Tetany in pregnancy, 265.
- Theory and practice of prognosis, 296.
- Therapeutic and diagnostic value of methylene blue, 89.
  - suggestions in diphtheria, 82.
  - uses, some, of hydrastis, 563.
- Therapeutics of insanity, 270.
  - ophthalmic, subconjunctival injections in, the present status of, 30.
  - suggestive, 36.
- Thorax, circumscribed and diffuse pulsations of the wall of the, 405.
- Throat and nose, special influences of the high altitude on the, 134.
  - and nose, the dependence of the aural affections upon the, 269.
  - organism, a new pathogenic, 411.
- Thrush, 267.
- Thyroidism, acute, following curettage, 124.
- Thyrotomy, intubation and tracheotomy for laryngeal stenosis from posttyphoid perichondritis, 319.
- Tinea tonsurans and favus, 412.
- Tobacco and alcohol poisoning, inflammation of the optic nerve due to, 545.
- Tonsil, pharyngeal, hyperplasia of the, etiology of, 269.
- Tonsillitis a cause of acute nephritis, 410.
- Tonsils, faucial, their use and abuse, 433.
- Toxins, intracellular bacterial, further studies of the, 440.
- Tracheotomy, thyrotomy, and intubation for laryngeal stenosis from posttyphoid perichondritis, 319.

Treatment, after, and preparation, in nasal operations, 370.
  antiseptic, of typhoid fever, 321.
  chronic rhinitis, its varieties, and, 49.
  drug, diagnosis and, of pneumonia, 316.
  new, of tuberculosis, 152.
  of anemia in children by iron-vitellin, 459.
  of chronic internal hydrocephalus by lumbar puncture, 363.
  of chronic nontuberculous inflammation of the lungs and pleura, 64.
  of disease, electric currents in the, 351.
  of fractured patella, 508.
  of incurable carcinoma uteri, 79.
  of malarial fever, substitute for quinin in the, 136.
  of mucous membrane colitis by colostomy, 456.
  of nephritis, 546.
  of penetrating wounds of the heart, 407.
  of pneumonia, 77.
  of scarlet fever and diphtheria, the use of antistreptococcic serum in the, 409.
  of whooping-cough, 414.
  for fracture of the neck of the femur, a new method of, 121.
  preventive, of pelvic floor lacerations, 315.
  some rectal diseases and their, 451.
  x-ray, of mycosis fungoides, 411.
Trichocephalus dispar, amebic dysentery, trichomonas intestinalis, and anchylostomum duodenale in the same patient, 164.
Trichomonas intestinalis, amebic dysentery, anchylostomum duodenale and trichocephalus dispar in the same patient, 164.
Tubercle bacilli, human and bovine, experiments with tuberculin made from, 454.
Tuberculin made from human and bovine tubercle bacilli, experiments with, 454.
Tuberculosis, a new treatment of, 152.
  hypertrophic, of the larynx, 318.
  in California, 208.
  the mode of infection of, 208.
Tubes, Fallopian, physiological function of menstruation and the part played therein by the, 253.
Tumor in the digestive tract, a report of two cases of, 448.
Tumors, intracranial, in the insane, with a report of two cases, 385.
Typhosus, bacillus, and allied bacilli, recent facts concerning the, 261.

U

Ulcer, duodenal, caused by pressure from stones in gall-bladder, 542.
  of the stomach, 516.
  perforating gastric, 223.
  pipe smokers', of the hard palate, 319.
Ulcers of the larynx, 548.
Uremia, cerebral lesions due to, 466.
Urethra, repair of the, by transpantation of the urethra of animals, 455.
  stone in the, *x*-ray demonstration of, 172.
Urine, albumoses in the, some observations on, 166.
Uteri, carcinoma, treatment of incurable, 79.
  puerperalis, a case of inversion, reduced by a modified Kuestner's method, 28.
  retrodisplaced, sterility depending upon, and their relief by the Alexander operation, 555.
Uterine dilatation, 266.
Uterus and ovaries, should they be removed in operating for double pyosalpinx? 27.

Uterus, cancer of the, operation of choice in, 409.
  lesions of the, intrapelvic hematoma following labor not associated with, 510.
  round ligament of the, fibroma of the intraabdominal portion of, 130.
  the gravid, etiology of the ischuria in retroflextion of the, 131.

V

Vaccination of the face, accidental multiple, associated with psoriasis, 539.
Vaccine, tetanus in, 507.
Vaginal Caesarean section in placenta previa, 266.
Venous circulation, aneurysm with unusual collateral, 74.
Vesical calculi, 170.
Vulva, a case of epithelioma of the, 457.

W

Wounds of the heart, penetrating, treatment of, 407.
Whooping-cough, its cause, complications and treatment, 414.
  the fatality of, 267.

X

X-ray demonstration of stone in the urethra, 172.
  treatment of leukemia, 362.
  treatment of mycosis fungoides, 412.

Z

Zoster, herpes, hemorrhagica (trigeminal), 491.

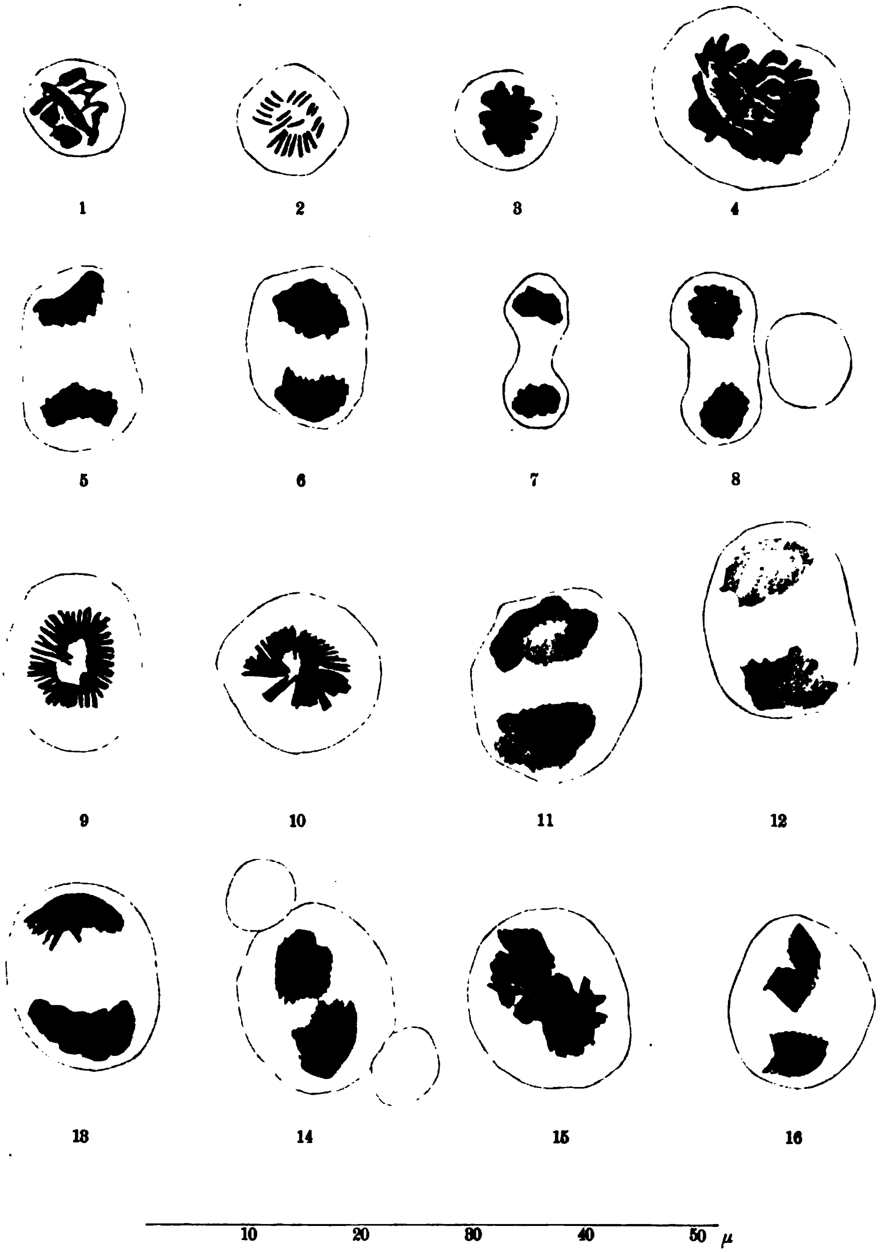
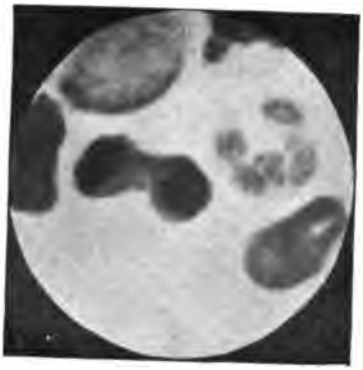


PLATE I.



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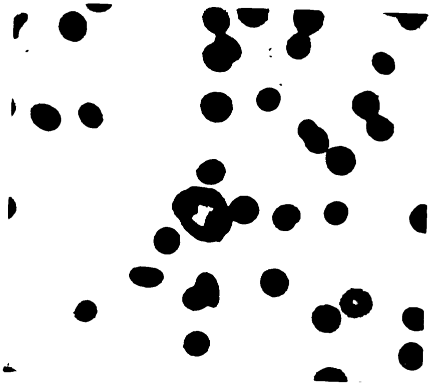

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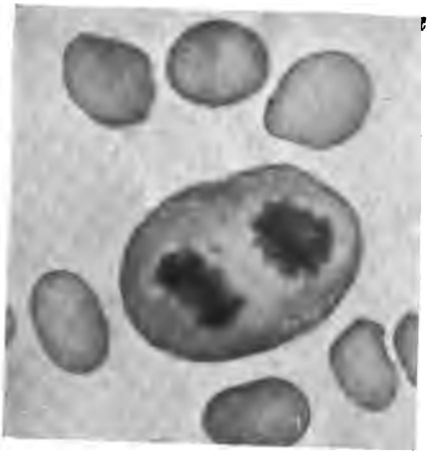

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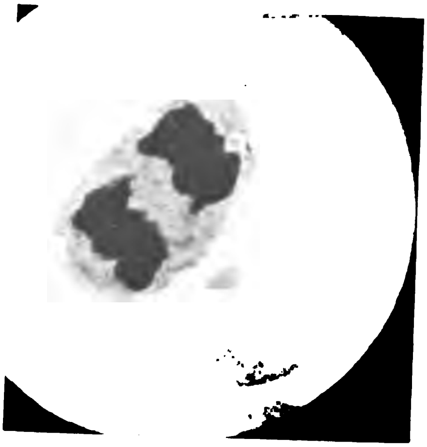

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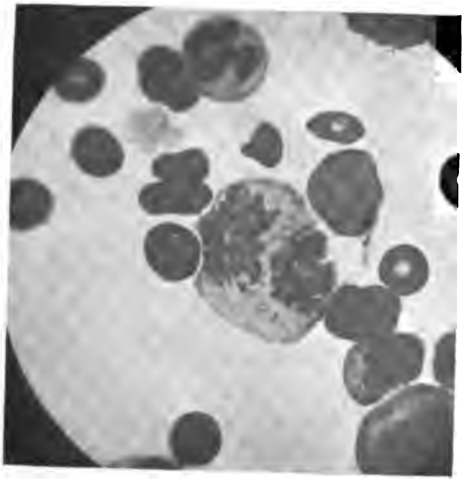

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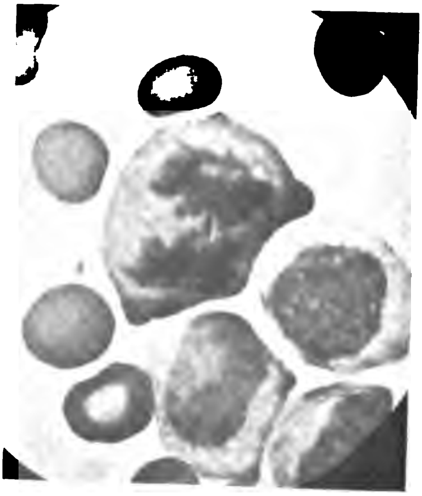

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PLATE II.

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ORIGINAL ARTICLES.

MEMOIRS.

MITOSIS IN CIRCULATING BLOOD.*

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MITOTIC figures were discovered in human blood corpuscles very soon after the characteristics of indirect cell division became known. Flemming,[13] in 1882, found cells showing typical figures in the blood of a leukemic patient under the care of Professor Quincke. Flemming rejected the view, obviously tempting at first glance, that the great increase of leukocytes in leukemia might be explained by indirect division, because the phenomenon was so rare that only one mitotic figure could be found among many thousand leukocytes. Moreover, he was uncertain whether the cells were really leukocytes in the usual sense, or the early stages of red blood corpuscles from the spleen or bone-marrow. Flemming's article is illustrated by pictures of mitoses in various stages, unstained, after treating the cells with acetic acid. In the following year Loewit[24] observed a mitotic figure in the blood of a patient with "severe secondary anemia." He was led by this to examine the blood of seven other cases of severe secondary anemia and two of leukemia. He found nucleated red corpuscles in only three cases, and in two of these indirect nuclear division. In 1884 Arnold[2] described, rather inadequately, karyokinetic processes in leukocytes. In 1886 Prus[33] noted the presence of distinct mitotic figures in the leukocytes from a case of "splenic leukemia." Hayem,[18] in 1889, described karyokinetic figures in the red corpuscles in the blood of an infant of ten months, with the diagnosis of leukemia. The clinical details are incomplete. The liver and spleen were enlarged. The red blood corpuscles numbered 2,712,500; leukocytes, 33,000. A statement that caused some comment at the time, but did not bring out any new work, was made by Spronck[37] in 1889. He hardened blood from the finger in Flemming's solution, embedded in celloidin, and stained sections of the mass with safranin. He claimed that the circulating leukocytes of healthy adults constantly contain mitoses in the proportion of about one to one thousand. In leukemia he found an increase—six to one thousand. From this observation it might be supposed that mitotic figures should be encountered frequently in estimations of leukocytes, and since this is obviously not so, Spronck has been generally discredited. It is true that he may have mistaken polymorphous nuclei for mitotic figures; but, on the other hand, some observations I have made in leukemic blood treated in the same way have led me to think that mitoses are more likely to be found in sections of hardened blood than in smears. But control observations would be tedious and not very profitable. Obrastzow[31] found a diaster in the blood of a case of acute leukemia. H. F. Mueller[28] examined two cases of leukemia, in which he found karyokinetic figures in all stages, though rarely. He later[29] described a case with large numbers of mitotic nuclei, so many that one figure could be found while counting "several hundred" leukocytes. The process occurred in both red and white corpuscles. The later article is illustrated by excellent pictures of karyokinetic leukocytes, one of the dividing neclei being atypical (tripolar). Von Noorden[30] saw a mitotic red cell in a case of pernicious anemia, and Dorn,[10] quoted by Juenger, found many such cells in the same disease. In the same year, 1891, Luzet,[25] [26] by asserting that "infantile splenic pseudoleukemia" is "characterized especially by the presence of large numbers of nucleated red blood corpuscles, many of which show signs of karyokinesis," called forth a great deal of work on the microscopic features of blood in the condition named and in the peculiarities of infantile blood in general. Baginsky[5] found suggestions of karyokinesis in the nucleated red cells in cases of infantile anemia with enlarged spleen, but was not prepared to accept the newly described condition as a distinct disease. He could not exclude an intimate relationship between it and rickets. Fischl,[12] in fact, soon found mitotic figures in the red cells in cases of anemia in rickets, while Hock and Schlesinger,[20] who denied the existence of characteristic blood changes in infantile splenic pseudoleukemia, observed mitotic figures in the red (?) corpuscles of both sick and healthy nurslings. Alt and Weiss,[1] however, agreed with Luzet regarding the blood picture of anemia infantilis pseudoleukemica, having found mitotic red cells in that disease, but not in the blood of several other anemic infants. Werthéim,[42] in studying leukemic blood with reference to the origin of the red and white cells, found karyokinetic figures in the (finger) blood of thirteen cases of mixed leukemia. The figures had the same characteristics as those in embryonic blood. In a case of lymphatic leukemia he failed to find mitoses. He explained the failure of others to observe the process in leukemia by neglect of stained preparations or by a too exclusive use of granule stains. He found that the number of figures varied in different cases and in the same case at different times. In some a whole preparation had to be searched to find a few cells showing the process. Like many other observers of the same period, Wertheim supposed that both red and white corpuscles took their origin from a common hemoglobin-free ancestor, and he saw nothing in his investigations to change his opinion. Rieder[34] found an "astonishing number of mitoses" in the blood from a case of myelogenous leukemia, both in "normal leukocytes" and "myelocytes." Troje[41] studied the mitotic figures in red and white corpuscles from a case of acute leukemia, and clearly recognized and stated the differences of both kinds of cells in all stages of development. About the same time Bastianelli[6] described and figured mitotic leukocytes in the blood of malarial patients, but the observations arrested little attention, probably on account of the greater importance of the author's researches on malaria published at the same time. Monti and Berggruen[27] noted karyokinetic figures in blood in the course of their careful study of the blood in infancy. Finding these in only two out of four cases of infantile splenic pseudoleukemia, they doubted the importance of the sign in the diagnosis of von Jaksch's disease. They also found a mitotic red cell in a case of "chronic anemia gravis cum leukocytosis," and indications of indirect nuclear division in one case of leukemia. Askanazy[3] reported a case of rapidly fatal pernicious anemia, with large numbers of megaloblasts, a few normoblasts, and some cells difficult to classify. Many cells showed mitotic figures in all stages of division. Two or three could be found in every cover-glass preparation. Askanazy's illustrations include one of a tripolar mitosis. In a later article[4] the same observer stated that he had frequently found indirect nuclear division in megaloblasts in severe anemias, as in a case of bothriocephalus anemia, the subject of the later contribution. Schauman[36] also found mitoses in red corpuscles in two out of twenty-six cases of bothriocephalus anemia. In 1895 Glockner[16] noticed mitotic red cells in two out of four cases of splenic anemia in infants. Stengel[38] figured mitoses in blood corpuscles in his comprehensive article in 1896. Those in red corpuscles he thought were comparatively rare, but those in leukocytes more frequent, especially in the large mononuclear cells. Writing in the same year, Grawitz[17] seemed to have had no experience with karyokinesis in blood cells, mentioning only cells with "two nuclei lying opposite each other." Pick[32] demonstrated at the Congress for Internal Medicine, in 1897, preparations containing beautiful mitotic figures in red corpuscles from a case of leukemia. The illustration in the second edition of von Limbeck's book was taken from these preparations. Von Limbeck[23] does not mention any observations of his own. Both Cabot[7] and Coles[8] figured and mentioned mitoses in their text-books, and Lazarus[22] thought that mitotic figures "have probably been seen by all who have had opportunities for examining the blood in pernicious anemia, especially in severe cases." Taylor,[40] in his extensive and painstaking observations in leukemia, found two typical karyokinetic cells, probably gigantoblasts, in two cases, and one leukocyte with indirect division. Juenger[21] was the first to make a more particular study of the subject of nucleated red blood corpuscles. His material was derived from cases of leukemia, and he made many important observations on mitosis. He questioned the belief of Mueller that karyokinetic red cells in leukemia are merely swept out of the places where they are formed, assuming rather that such phenomena indicate metaplastic processes in bone-marrow. He agreed with Troje that no transition forms could be found from mitotic leukocytes to red corpuscles. According to him, both nucleus and protoplasm have unmistakable features in each variety of blood-cell. Juenger's article is well illustrated. Frese,[14] in his article on metastatic cancer of bones, mentions a case of cancer of the stomach with numerous metastases, and with severe anemia (hemoglobin, 21; red corpuscles, 900,000; leukocytes, 9220), with a few mitotic megaloblasts. He refers to a case of cancer of the prostate with metastases, reported by Braun (*Wiener med. Wochenschrift,* 1896, Number XII), with mitoses. Sabrazès[35] claimed to have found karyokinesis in the leukemia of infants. Mitosis in leukocytes (myelocytes) he thought rare in leukemia; in red cells, not so rare. Hayem[19] made the interesting statement in 1900 that he had never seen mitotic leukocytes in leukemia. "The red cells, on the contrary," he said, "present these, not only in the disease called, without good reason, infantile pseudoleukemia, but also in leukemia of adults." Geissler and Japha,[15] whose work on the blood of children contains many observations of value, give two cases of rickets with enlarged spleen and moderate anemia in which mitoses occurred in red cells. Strauss and Rohnstein[39] found a mitotic megaloblast in one of three cases of bothriocephalus anemia observed by them. Ewing[11] quite recently has mentioned mitosis in red corpuscles, megaloblasts especially, in pernicious anemia. He found them usually only in the severer stages of the disease. Atypical mitosis he considered "one of the most significant pathological signs within the range of blood analysis."

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*Read before the Association of American Physicians, 1902.

On the whole, the number of reports on mitosis in circulating blood is small, especially in comparison with the extensive literature on blood. I have tried in the résumé above to include all the important references, but have omitted several allusions, some of which are almost as definite as one or two I have quoted, because they add nothing to the development of the subject.

The divergent results and views of previous writers seemed to me to render worth while a report of my own observations. These were not made primarily for the purpoes of finding mitoses. They were made in the course of routine examinations in ordinary clinical work, and extend over a number of years and a somewhat extensive material. My interest was excited especially by the statement of Spronck, referred to above, because my observations up to that time had revealed very few mitoses. The material from patients under my care includes twenty-two cases of mixed-celled (so-called myelogenous) leukemia, three cases of chronic small-celled leukemia, two cases of acute leukemia, two of fatal megaloblastic anemia, apparently acute, one of which has been reported,[9] forty cases of chronic pernicious anemia, and several hundred cases of secondary anemias, chlorosis, and leukocytosis.

Mitotic figures were found in both cases of acute anemia; in two cases of chronic pernicious anemia; one case of severe anemia with splenomegaly, of doubtful origin, in an infant, not rhachitic, but possibly syphilitic; in eight cases of myelogenous leukemia, and one case of acute leukemia. Many of the patients with pernicious anemia were seen only during short periods.

Most of my examinations were made on preparations fixed in ether and alcohol and stained with hematoxylin and eosin. This gives fairly good results, though better ones can be obtained by following Mueller's plan of treating the preparations with picric acid and staining slowly in weak hematoxylin solution. With the former method errors in confusing mitotic cells with polymorphonuclear leukocytes are easily avoided by washing out the eosin until the leukocyte bodies are colorless. With Ehrlich's triacid stain mitotic cells can be recognized, but often with difficulty.

As some of the illustrations show, the ordinary methods of preparing blood for clinical purposes preserve the mitotic figures very well. The skeins, however, must be more or less compressed by the flattening of the cells in drying. In one case of leukemia beautiful preparations were made for me by Doctor (then Mr.) Carlin Philips, according to Spronck's method. The sections stained with safranin seemed to show more mitoses, and certainly more typical ones, than did the cover-glass preparations.

As regards the kinds of cells containing mitoses, these were the red cells in seven cases of leukemia and in the severe anemias. In three cases of leukemia only the red cells showed mitoses. In one case of leukemia only the myelocytes were involved; in fact, all the mitotic leukocytes seemed to be myelocytes (of Ehrlich). I have never encountered a lymphocyte undergoing mitosis in the blood, though in two of my cases of small-celled leukemia I carefully examined scores of preparations. Nor have I seen mitosis in what seemed to be a polymorphonuclear leukocyte. In the case of acute leukemia, with about 540 nucleated red cells per cubic millimeter, one red cell, apparently a megaloblast, contained a good diaster. In the anemias all the mitoses were in red cells, usually megaloblasts. The occurrence of mitotic figures in normoblasts has rarely been noticed by previous writers, but in leukemia many of the most unmistakable figures, in my experience, have been in cells not much above the average size. Some years ago I expressed the opinion that mitoses are more frequntly found in white than in red cells in leukemia. A larger experience has made me reverse this.

The number of mitotic figures varies very much, not only in different cases, but in the same case at different times. In some cases only a single mitosis can be found in a thorough search of several preparations. In a case of leukemia, on the other hand, I found in one cover-glass preparation six diasters in early stages, five more with constriction of the cell-body, and twenty-three equatorial plates in red cells, and eight diasters and two equatorial plates in leukocytes. This includes only well-preserved figures. Many imperfect figures were present in the same preparation, but as these cannot all be sharply distinguished from fragmented nuclei it seems better to reject them all. Much depends upon good spreads. Askanazy has told us that he found several mitoses in one preparation and none in another made at the same time, and I have had a similar experience. It seems better to have the film rather thick, though with the corpuscles as nearly as possible all flat. That Wertheim found mitoses in all of the thirteen cases of leukemia seems rather hard to believe, yet it may be possible as the result of an unusual series of cases. I have had four consecutive cases with mitoses in leukemia.

Regarding the phases of mitosis encountered in blood, there are some interesting facts. The preparatory phase, in which the chromatin shows a coarse meshwork, is strongly suggested by many nucleated red cells, especially certain megaloblasts, and many normoblasts in leukemic blood. The earliest appearance that can be positively identified —the spirem with rather coarse skein—has been rare in my preparations. It is shown in Figures 1 and 4.

The metaphase is rather more frequent (2, 3, 9, 10). The commonest figure by far in red cells and leukocytes is the diaster, without signs of division of the cell body (Figures 5, 6, 11, 12, 13, 15, 16), and somewhat less frequently a still later stage,.with more or less constriction or division (7, 8). Achromatic spindles I have never encountered in films, but have in sections. Centrosomes are not easy to identify. Sometimes there are small particles of chromatin that seem to represent them. Fragmentation and other evidences of degeneration of the nucleus are not rare in mitotic blood cells. Hyperchromatic nuclei occur sometimes (Plate I, Figure 4), being a marked example. There are differences in the nuclear figures of the red and white cells, and I have seen nothing to indicate the transition from one to the other. The mitoses in red cells are usually plumper in the later stages, and stain more deeply in all stages than do those in myelocytes. This is true also of cells in blood hardened en masse. The red cells vary in intensity of color, though the differences in many instances are doubtless due to accidental variations in spreading.

The mitotic red cells are usually orthochromatic, but many show polychromatophilia in various degrees. (Plate II, Figure 3.) Punctate mitotic cells, such as Lazarus pictures, I have found in only a few instances in pernicious anemia. A more common appearance is polychromatophilia, with a loss of the usual luster of the protoplasm in part, usually the outer part, of the affected cell. (Plate I, Figure 2.) This latter change can hardly be anything but a degenerative one, whereas the polychromatophilia represents conditions that are normal in embryonic blood. Vacuoles and fissures may be found in mitotic red cells. They are probably in part artefacts.

The mitotic leukocytes usually have a distinctly granular, spongy, or foamy protoplasm, and in the triacid stain show fine neutrophile granules. Sometimes the protoplasm looks more delicate, as if degenerated (Plate II, Figure 5), and in some cases it takes the nuclear stain more or less distinctly, while the nuclear figures are unusually pale.

In endeavoring to discover the significance of the presence of mitotic processes in circulating blood I have examined the associated conditions. The mitotic red cells in leukemia were not encountered only in those cases with the greatest anemia, nor were they always encountered in such cases. The red cells in the seven cases ranged from 2,230,000 to 3,587,000, and in several cases with less than two and a quarter million red cells per cubic millimeter there were no mitoses.

In all cases of leukemia with red cells in mitosis there were many nucleated reds—from 1,100 to 20,800 per cubic millimeter in my seven cases—but there were other cases with many nucleated red cells—from 2,000 to 14,000 per cubic millimeter—without mitoses in the red cells. There is no constant relation between these; but in a single case there is sometimes a relation between the number of mitotic red cells and of all nucleated red corpuscles. Thus in one case with very many mitotic reds there were 7,378 nucleated reds per cubic millimeter, the total red count being 2,500,000. The number of nucleated reds fell to 2,100 and then 416 per cubic millimeter, with a decreasing number of mitoses, and finally with 258 nucleated red cells in the cubic millimeter, no mitoses could be found. In the pernicous anemias, with sometimes large numbers of mitotic figures, there were only from 232 to 400 nucleated red cells per cubic millimeter, except in the acute case already reported, in which there were up to 20,000 or more.

The mitotic myelocytes were usually found in cases with high leukocytosis—that is, 165,000, 300,000, 608,000, 700,000, and 882,000. The last-mentioned case had by far the most, perhaps more than all the others together, while the case with 165,000 leukocytes had very few and the one with 300,000 still less. But in another case, with 600,000 leukocytes, no mitotic myelocytes could be found. The cases with mitotic myelocytes in my series were those that had the largest proportion of myelocytes—namely, 158,000, 182,000, 183,000, 212,000, and 323,000 per cubic millimeter. Only one case without mitotic myelocytes had a larger number than the lowest of them, and in that case the leukocytosis fell soon and the myelocytes became much less numerous.

These facts seem to me to go far toward an explanation of the phenomenon. Though our knowledge of the circulation in the blood-forming organs is too imperfect to permit clear conceptions, the presence of both nucleated red cells and myelocytes indicates a defect in the process. Chemotactic processes have been supposed to explain the entrance of the myelocytes into the circulation. The presence of mitoses in the cells would be easily explained by assuming that cell formation is active and that some of the cells happen to migrate in some stage of division. Even if the myelocytes are swept into the circulation in a passive way we should expect to find division processes in some of them.

In the case of the nucleated red cells one is tempted to see a teleologic process and to suppose that evidences of mitosis indicate active regeneration of the blood. This, however, is difficult to prove. In the case of leukemia with many mitoses, gradually decreasing, the red cells increased about one million per cubic millimeter. But in other cases there was no perceptible gain. In chronic pernicious anemia the mitosis in both my cases appeared in periods of active improvement. The same thing was true of a patient whose blood I had the privilege of examining with my colleague, Doctor Arneill. But in other cases of pernicious anemia, at times of rapid improvement, I have failed to find mitotic cells, and in one of the two cases I had watched the patient through two previous stages of improvement, equally rapid, without finding any mitotic cells. In my two cases of acute fatal anemia mitoses were very numerous. Unfortunately, it is not possible in such cases to know how much blood-destruction is going on. Improvements in our methods may be able to throw more light on this question. At present I think we are not justified in claiming that mitosis in circulating blood has a definite diagnostic or prognostic value. In general it coincides with the occurrence of many nucleated red cells or myelocytes in the circulation. The differentiation between mitotic red and white cells, as I have said above, is easy. The question whether the mitotic red cells are normoblasts or megaloblasts is, of course, important; but the mitosis itself does not change materially the prognostic status of these cells. A few mitotic megaloblasts do not indicate a bad prognosis in the immediate future. One of my patients lived for a year in comparative health after such mitoses were found, and another has made a remarkable improvement in the four months since the observation.

Atypical mitosis is apparently rather more serious in its indication than the normal process, but probably only because it is found with extremely active cell development, and because this is often a part of unfavorable conditions.

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EXPLANATION OF PLATES.

PLATE I.

Camera lucida drawings; Zeiss one-twelfth inch oil immersion, Number 4 eyepiece; tube 160 millimeters. (See scale.)

Figures 1-7.—Red corpuscles from a case of myelogenous leukemia.
Figure 8.—Red cell from another case.
Figures 9-12.—Myelocytes from two cases of leukemia.
Figure 13.—Red cell, infantile anemia.
Figures 14-16.—Megaloblasts from case of fatal anemia following endothelioma of the nose.

PLATE II.

(Photomicrographs by Doctor Charles S. Bond, Richmond, Indiana.)

Figure 1.—Normoblast from case of leukemia. × 1500.
Figure 2.—Field with degenerated megaloblast from case of endothelioma of nose. × 500.
Figures 3 and 4.—Megaloblasts from the same case. × 2000.
Figure 5.—Degenerated myelocyte; leukemia. × 1000.
Figure 6.—Myelocyte; leukemia. × 1500.

A CASE OF INFECTION WITH BACILLUS PYOCYANEUS WITH THE PRIMARY FOCUS IN DECUBITUS AND WITH SPECIAL REFERENCE TO THE HEMOLYTIC ACTION OF THE ORGANISM.

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[From the Pathological Laboratory of the University of Michigan.]

When Gessard in 1882 established the relationship between the *Bacillus pyocyaneus* and the green or blue pus found in wounds, the organism was regarded merely as a saprophyte until Charrin seven years later firmly established its causal connection with certain well-defined pathological processes. Since that demonstration the observations on the subject have been numerous, and the increasing importance of this bacillus in the pathology of man is well shown by the admirable summary by Perkins in 1901 of about one hundred reported cases of infection with the *Bacillus pyocyaneus*. In this article, to which the reader is referred for specific reports, Perkins shows that the bacillus pyocyaneus has been proven to be the active agent in skin lesions, principally of the echthymatous type, in furuncle, in acute and chronic otitis media, panophthalmitis, ozoena, acute angina, bronchiectasis, bronchopneumonia, gangrene of the lungs, noma, œsophageal lesions, ulcerative gastritis, cholera nostras, infant diarrhea, dysentery, appendicitis, pleuritis, pericarditis, peritonitis, bursitis, arthritis, acute endocarditis, cystitis, liver abscess, mastitis, ovarian abscess, endocervicitis, puerperal sepsis, meningitis and general septicemic infection. To this formidable list, the author adds nine cases of his own met with in the course of three years' practice. Two of these were of especial interest as noting conditions in which this organism had not previously been found—one, an acute orchitis in the course of a low fever, probably typhoid, with the bacillus found in pure culture in the testicle; the other, a fatal case of infected burns of the third degree with this organism present in the heart's blood. Since Perkins' paper appeared Nabarro (1902)[2] has reported a case of gangrene of the nose, in which the bacteriological examination showed the bacillus pyocyaneus to be present throughout the gangrenous tissue while streptococci were confined to the periphery.

In the many reported cases of pyocyaneus infection we find that the clinical and pathological findings vary only within rather narrow limits. Kossel (1894)[3] reports in the case of a four-year-old child, diarrhea with green stools, green vomit, anorhexia and weakness, with the green-pus germ in abundance in the stools, while the ordinary intestinal organisms had nearly all disappeared. Wollstein (1897)[4] describes two cases of ulcerative gastritis and general infection, with vomiting, diarrhea, loss of weight, great weakness and hemorrhages into the skin. The gastric ulcers originated in the submucosa and infection spread thence by means of the blood-current, the bacilli being found in heart's blood, kidney, liver, spleen and skin. One of two cases of infection with bacillus pyocyaneus reported by Williams and Cameron (1894)[5] presented clinically diarrhea, green stools, fever, abdominal pain and tenderness, purplish papules giving rise to subcutaneous hemorrhages and epistaxis. At autopsy emboli of bacilli were found in capillaries of liver, spleen and kidneys. The second case of these authors showed green stools, general lividity and pustules on the head, but no purpuric spots. They cite also a case of Ehler's and one of Neumann's, in both of which were found petechiæ and hemorrhages. In Nabarro's case[2] of gangrene of the nose there were wasting, diarrhea, pallor, and a small, feeble pulse; but no rash, hemorrhages nor splenic tumor. Recovery followed operation. Barker (1897)[6] thus summarizes the symptoms and pathology of his eleven cases. In cases in which local infection has occurred, and especially in those in which large mucous surfaces have been involved, the phenomena of acute general infection are common,—fever, delirium, albuminuria, meteorism. At autopsy one finds vasomotor disturbances, hemorrhages, focal necroses, and parenchymatous lesions in heart, liver, spleen and kidneys. Lartigau (1898)[7] writes of general infection with the bacillus pyocyaneus as *maladie pyocyanique*. Its clinical evolution resembles, in a general way, other forms of septicemia and some of the acute febrile diseases. Weakness, fever and prostration at the onset; enlarged spleen, tympanites, a temperature of 103° to 105.5°, intestinal disturbances, greenish dejecta, blood-stained vomiting, bullous eruptions, petechiæ, papular rash and sometimes epistaxis. Lartigau's picture of the pathological changes corresponds with that of Barker,—vasomotor disturbances, hemorrhages, lesions in parenchyma of heart, liver, spleen and kidneys, focal necrosis, superficial necrosis and sometimes ulceration of intestinal mucosa.

In none of these reports do we find mention of the action of the bacillus or its toxins on the blood, although the almost constant occurrence of hemorrhage would indicate some change in either the blood or the vessel walls or both. The following case in which such action is prominent, occurred in the neural clinic of the Hospital of the University of Michigan, in charge of Doctor W. J. Herdman. The autopsy was performed and the pathological diagnosis made by Doctor A. S.

Warthin. It is due to the kindness of these gentlemen that I am permitted to report the case which has been worked up under the supervision of Doctor Warthin. The bacteriological examination was made by Mr. W. J. MacNeal, assistant in the bacteriological laboratory.

The clinical history is greatly condensed.

R. K., age thirty-six, laborer by occupation, was admitted to the neural clinic September 8, 1902. Family history and previous personal history negative. July 16, 1901, he fell from a roof and injured his back. Since then he has been unable to move the lower limbs and has had no control of bladder or bowels. He has had bed-sores since shortly after the injury.

Physical examination at time of admission.—The patient looks slightly anemic. His appetite is good. He has a small bed-sore on the lower left side and an ulcer on the left great toe. There is slight edema of the ankles. The lower limbs are atrophied. There is complete loss of sensation below a level about two and one-half inches below the umbilicus. Patellar reflexes are increased, ankle clonus and Babinsky's sign are present. Spinous processes of fourth and fifth (?) dorsal vertebræ are prominent.

Blood examination.—Red blood cells 4,800,000; leukocytes 7,600.

Urine examination.—Reaction, alkaline. Specific gravity 1010 to 1013. Chemical tests, negative. Sediment contains triple and amorphous phosphates, leukocytes, some squamous cells, one or two granular casts.

The patient showed signs of progressive intoxication with increasing weakness, nausea, vomiting, loss of appetite and profuse sweating. He died October 13, 1902, at 5:30 P. M.

Clinical Diagnosis.—Transverse myelitis (traumatic).

Autopsy was held October 14, 9 A. M., by Doctor Warthin.

Autopsy Protocol.—Body slender, one hundred sixty-four centimeters long. Marked distortion of pelvis and shortening of left leg. Right leg rolled outward and extremely abducted. Tenth, eleventh, and twelfth dorsal spinous processes prominent. Entire sacral region covered with bed-sore with loss of tissue, exposing sacrum, and showing opening of a sinus which leads into spinal canal. Other bed-sores over right trochanter, left tuberosity, left heel, right external malleolus and outside of right foot. Skin dark sallow, dry and scaly. Large slate-green patch over right knee, smaller ones over right thigh and right iliac regions, exhibiting marked crepitus (subcutaneous emphysema). Slight greenish color over thorax and upper extremities. Muscles small, soft, emaciated; on section pale, brownish-red, soft, friable. Panniculus small in amount; on section orange-yellow. Slight edema over ankles and thorax. Hair of scalp thin, dry and brittle.

Brain somewhat anemic and edematous. Third and fourth ventricles and foramen of Monro dilated. Longitudinal sinus contains gas bubbles and small white clot. Basal sinuses contain small antemortem and foamy clots. Cerebral meninges slightly thickened. Spinal cord normal down to seventh dorsal vertebra, at which point begins great thickening of meninges. Tenth dorsal vertebra is completely dislocated backward and the body crushed. Tenth ribs dislocated anteriorly. At level of tenth dorsal vertebra both cord and membranes are completely destroyed. Cord begins again at lower part of eleventh dorsal vertebra, at which point dura is greatly thickened and covered with fibrinopurulent exudate, subdural and arachnoid spaces are filled with pus, cord itself infiltrated with pus, softened and necrotic. Cauda equina and nerves of lumbar and sacral plexuses infiltrated with pus, which has worked its way along branches of sciatic the length of the right thigh and into the knee-joint. Muscles of right thigh are necrotic, gangrenous and filled with pus sinuses containing gas bubbles.

Diaphragm at fifth rib on left, fourth rib on right. Mediastinal fat in small amount. Both pleural cavities empty. Apex behind fifth rib, just inside nipple line. Pericardial sac rather lax, contains a small amount of clear fluid. Large soldier spot on anterior wall of right ventricle. Heart weighs three hundred four grams. Subepicardial fat increased. Ventricles contain thin, watery blood. Large chicken-fat clots in aorta and pulmonary artery. Mitral flaps slightly thickened. Mitral and aortic rings rather small. Valves otherwise negative. Beginning sclerosis in aorta.

Left lung free except old adhesions at base, collapsed, abundantly anthracosed. On section it bleeds freely and yields foamy fluid on pressure. Right lung shows old, easily-torn adhesions over lower part of middle lobe and lower lobe; partly collapsed. On section, mottled dark red, light red and black, the dark areas being quite firm. One small calcareous mass. Otherwise similar to left. Vessels of lungs negative. Bronchi contain small amount of clear, foamy fluid. Bronchial glands heavily anthracosed.

Thoracic aorta, thoracic duct, esophagus, larynx and trachea negative. Thyroid shows slight increase of interstitial tissue. Three or four small, bluish-red bodies resembling hemolymph glands removed from below left lobe of thyroid. Small, anthracosed masses of calcification found in cervical tissues.

No fluid in peritoneal cavity. Omentum contains small amount of fat. Spleen weighs two hundred fourteen grams; thirteen centimeters long, eight centimeters broad, five centimeters thick. Capsule rather thickened and adherent. On section it is pale, brownish-red with dark-red mottling. Pulp rather firm. Stroma increased.

Adrenals fairly well preserved.

Left kidney weighs one hundred ninety-eight grams and measures 11x8x4 centimeters; the right weighs one hundred eighty grams and measures 12x7x4 centimeters. Fatty capsules of both fairly well developed; fibrous capsules slightly adherent. On section cortex shows interstitial change more marked in right kidney than in left, some areas showing a firmer consistency and a more homogenous and shining appearance than the rest of the organ. Lugol's amyloid test negative in both kidneys. Cortex of left measures 10 to 15 millimeters; of right, 2 to 12 millimeters. Mucosa of pelvis in both thickened and injected.

Ureters dilated and thickened, the right particularly. Mucosa thickened and covered with purulent exudate. Bladder small, with thickened wall covered with a diphtheritic membrane, containing lime-salts in places.

Stomach small; contains small amount of grayish fluid; mucosa shows advanced postmortem change. Pylorus small and contracted. Small intestine negative. Colon contains small masses of feces. Rectum shows one small, internal hemorrhoid.

The liver weighs one thousand seven hundred ninety-two grams and measures 25x18x9 centimeters. Capsule negative. On section, lobules small, central vein distinct, peripheral part of lobule a brownish-yellow color. Gall-bladder, bile-passages and portal vein all negative. Pancreas shows advanced postmortem change. Mesentery shows large, prominent glands, the majority pale, but a few red. Retroperitoneal glands are prominent but not distinctly enlarged. The majority are pale, only a few resembling hemolymph glands.

Vas deferens, seminal vesicles and seminal ducts present walls greatly thickened and hyaline. Testicles soft and atrophic. Pelvic tissues greatly thickened and show scar tissue through which run sinuses containing pus.

Microscopic examination Spinal Cord.—No cord structure remaining at point of lesion (level of tenth dorsal vertebra). Cord almost entirely destroyed just above lesion. Marked, subacute, fibrino-purulent leptomeningitis just below lesion. Cauda equina infiltrated with pus and shows marked descending degeneration of cord structure. Large, central, purulent tract in lower cord increasing from above downward.

Sacral and Lumbar Plexuses and Branches of Sciatic.—Purulent infiltration. Marked descending degeneration of nerve elements and fibroblastic proliferation in and about nerve bundles.

Muscles of Lower Extremities.—Abscesses, fistulous tracts, gangrenous myositis, atrophy and degeneration. Methylene blue and Weigert's stain show great masses of bacteria, most marked in vicinity of gas bubbles.

Hemolymph Glands.—Hematoxylin and eosin stains show only a marked congestion, but by means of the iron reaction the hemosiderosis is shown to be extreme. The iron-containing pigment is found in large quantities in round cells and phagocytes throughout the blood-sinuses. The phagocytes are neither very large nor very numerous.

Spleen.—Simple atrophy, acute and chronic congestion, increase of stroma, coagulation necrosis of the follicles and very marked pigmentation. The iron reaction with potassium ferrocyanid and hydrochloric acid proves this pigment to be hemosiderin. Sections which have been subjected to this reaction and then stained with borax-carmine show the stroma throughout the specimen outlined by this pigment, lying within the endothelial cells of the blood-spaces, and in the round cells. In places it is piled up in black masses. The follicles are for the most part free from pigment, but a few of them show a very small amount.

Liver.—Sections show simple atrophy, slight cloudy swelling, round all infiltration of Glisson's capsule, congestion of central veins and an increased amount of pigment in the central zone of the lobules. Only a very small part of this pigment responds to the iron reaction, and this part lies, not in the liver cells, but in the endothelium lining the blood-spaces. Hemosiderosis therefore is not marked, but there is a large amount of hematoidin lying in the liver cells of the central zone.

Kidneys.—Subacute interstitial nephritis (early stage of primary contracted kidney) so localized as to resemble the so-called syphilitic kidney. The glomeruli show connective-tissue increase. Parenchyma shows atrophy and cloudy swelling. By means of the iron reaction is brought out a considerable amount of hemosiderin, the localization of which is interesting. The labyrinths are entirely free, the pigment being found only in the straight tubules of cortex and medulla giving the effect in section of converging lines. It appears in the form of a very fine granular deposit largely in the interstitial connective tissue, but also in the epithelial cells of atrophic and necrotic tubules. It does not appear at all in parts of the kidney free from interstitial nephritis.

Lungs.—Acute and chronic congestion. Early stage of induration. Marked edema. Numerous bone-marrow giant cells in the capillaries.

Thyroid.—Interstitial connective tissue increase.

Ureters.—Chronic ureteritis.

Bladder.—Chronic polypoid and acute diphtheritic cystitis.

Lymph Glands.—A few show marked congestion.

Pathological Diagnosis.—Traumatic transverse myelitis. Subacute fibrino-purulent meningo-myelitis. Decubitus. Gangrenous myositis. Purulent neuritis. Marked atrophy of muscles of lower extremities. Early stage of chronic interstitial nephritis. Chronic cystitis with acute diphtheritic cystitis. Hyperemia of all organs. Edema of lungs. Hemosiderosis of spleen, hemolymph glands and kidneys. General atrophy.

Bacteriological report (condensed).—Material was taken from five places.

(1) *From fluid under the Pia and portions of Brain Substance.*—Cultures of this material revealed the bacillus pyocyaneus in pure culture and very pathogenic for guinea-pigs. One-half a cubic centimeter of a beef-tea culture injected into the peritoneal cavity of this animal caused death in nineteen hours, and pure cultures of the organism were obtained from the peritoneal fluid and heart's blood.

(2) *From the Cerebrospinal fluid at the base of the Brain.*—Here were found the bacillus pyocyaneus, and in fewer numbers a nonmotile bacillus which failed to survive further culture.

(3) *From the Heart Blood.*—Plates made from bouillon cultures remained sterile after incubation for three days. Incubation of the original beef-tea culture produced a diffuse cloudiness at twenty-four hours. Agar plates from this culture produced a pure culture of a nonmotile bacillus.

(4) *The Pericardial fluid.*—Agar plates made from a bouillon culture after forty-eight hours' incubation showed three colonies which on

further investigation proved to a staphylococcus, a nonmotile short rod and nonmotile short threads. The original bouillon tube showed an abundant growth at forty-eight hours. Hanging drops showed several kinds of rods and cocci present.

(5) *Pus from the lower dorsal region of the Spinal Cord.*—In the various cultures made the bacillus pyocyaneus greatly predominated. The original bouillon tube showed a considerable foam after twelve hours' incubation, but a second tube inoculated from this one failed to develop gas, so the organism producing it was unable to survive the incubator temperature or the competition of other organisms. The original tube also developed a great variety of bacteria but the bacillus pyocyaneus was the predominating organism.

Further experiments with pure cultures of this bacillus by Mr. McIntyre, assistant in the bacteriological laboratory, proved conclusively its very pathogenic power toward guinea-pigs. Mr. McIntyre also tested the hemolytic action of the toxin and found it very strongly hemolytic in the blood of several of the lower animals and of man.

SUMMARY.

The bacillus pyocyaneus was found in pure culture in the brain and subpial fluid, in association with a nonmotile bacillus, in the cerebrospinal fluid at the base of the brain and in association with a variety of bacteria in the pus from the spinal cord. It is quite probable that the heart's blood and pericardial fluid were sterile within the body.

The most obvious source of the infection in this case is the decubitus, but on account of the neuroparalytic condition of the bladder the latter must not be overlooked as a possible atrium. Blumer and Lartigau (1900)[8] report a case of ascending urinary infection with bacillus pyocyaneus in which a bed-sore may have been the primary focus, but the authors consider it more probable that infection came by way of the genitourinary tract. In the present case the direct communication between the extensive sacral bed-sore and the spinal canal, and the extension of the infection along the nerve trunks from this region, together with the predominance of the bacillus pyocyaneus in the pus and its presence in the pure culture in the brain, indicate the decubitus as the most probable source of infection.

The clinical course of the case indicates a slow, progressive intoxication by the absorption of toxins rather than an acute bacteriemia, and the pathological changes are such as might result from such an intoxication. Aside from the trauma of the cord, the decubitus and the purulent inflammation directly consequent, we find chronic inflammation of kidneys, ureters and bladder, with parenchymatous changes in liver and spleen and general congestion. These findings correspond to those of Barker and of Lartigau except in the absence of hemorrhages. But in addition we find in liver, spleen, kidneys and hemolymph glands evidence of extensive hemolysis.

The researches of various authors have proven the bacillus pyocyaneus capable of producing a toxin which exercises a marked hemolytic action on the blood of various animals, including man. Bulloch and

Hunter (1900)[9] isolated a body, pyocyanolysin, which caused diffusion of hemoglobin when mixed with the blood of oxen, sheep, rabbits and other animals. Weingeroff (1901)[10] using weaker toxins produced similar results in the blood of rabbits, guinea-pigs, horses, dogs, doves, mice and frogs. Lubenan (1902)[11] using a culture of the bacillus pyocyaneus from a case of eczema found the hemolytic power of the toxin to be enormous. And, as already mentioned, Mr. McIntyre using cultures from the present case, isolated a body whose hemolytic action was very marked on the blood both of lower animals and of man.

So far as the literature shows the hemolytic action of the bacillus pyocyaneus within the body has not been observed. In the present case the evidence of such action rests on the presence of an increased amount of iron-containing pigment in liver, kidney, spleen and hemolymph glands. In the spleen and hemolymph glands especially this hemosiderosis is excessive, being greater than in any other case which has come to this laboratory. No case of pernicious anemia has approached it. The process seems to be an acute one, the pigment appearing principally in the endothelial cells lining the blood-spaces of the spleen and in round cells in spleen and hemolymph glands. But very little hemosiderin is found in the liver. The hematoidin, however, is here quite marked. The localization of the pigment in the kidney is interesting, but hard to explain by our present knowledge. Clinically the patient looked anemic, though the blood-count of 4,800,000 reds would not indicate this. This count was, however, made on the patient's entrance into the hospital.

The occurrence of increased hemolysis in infection with the bacillus pyocyaneus is in line with observations in other infections, and in such intoxications as pernicious anemia and obstructive jaundice. That it has not been noted may be due to lack of particular observation on this point.

In the foregoing case we see, in logical sequence, traumatic paralysis with resulting decubitus; the latter a primary focus for general infection with the bacillus pyocyaneus; and the toxins of this bacillus causing septicemia with not only chronic congestions and inflammations with parenchymatous changes, but also an extensive acute hemolysis. Had the patient survived longer hemorrhages would in all probability have followed.

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PELVIC INFLAMMATION FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.*

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I FEEL like apologizing to the members of this society for inflicting on them a paper written by a specialist for the general practitioner. My excuse, however, is that a paper on this subject was requested. Consequently, it will be considered your own fault if my presentation of a much discussed subject wearies you. Whether or not in this twentieth century it is well for the medical student and hospital interne, intending to devote his life to a specialty, to engage first in general practice, is much more open to discussion now than was the case twenty-five years ago. To thoroughly master a specialty at the present time is no small task and may well consume a man's entire energies. Be this as it may, I believe that the specialist who has never been a general practitioner will have some difficulty in putting himself in the practitioner's place and considering the different phases of the subject from a physician's standpoint.

Necessarily, in the short time at my disposal, it will be impossible for me to consider the entire subject of pelvic inflammation in women. Hence, I shall confine my remarks to the consideration of intrapelvic inflammation, touching only incidentally on the inflammatory affections of other portions of the genital tract.

Clinically, we may divide intrapelvic inflammatory affections into, first, nonpuerperal, and second, puerperal. This classification will be found convenient for, although the same microorganisms may produce the inflammation in both classes of cases, the course and clinical picture of the disease will vary in puerperal and nonpuerperal patients.

I.—NONPUERPERAL INTRAPELVIC INFLAMMATION.

The clinical picture of a patient with acute inflammatory pelvic disease is familiar to us all. In a severe case, we find the patient in bed, with her legs flexed. Her face, while not exhibiting the pinched and drawn look of a patient with general peritonitis, has an anxious expression and indicates considerable suffering. The temperature is

* Read by invitation before the VAN BUREN COUNTY (Michigan) MEDICAL SOCIETY.

elevated, probably being 102° or 103°. The pulse ranges from 100 to 120, but is rather full and strong, not weak and thready as is the case in general peritonitis. Abdominal examination shows marked rigidity of the recti muscles, the entire abdomen is sensitive to the slightest touch, but the tenderness is most marked low down and just above the pubes. The abdomen is somewhat distended. By urging the patient to relax and by gentle manipulation, a hard mass can be made out just above the pubes, extending into the inguinal region. This mass is irregular, hard, immovable and extremely sensitive. Bimanual examination shows the cervix sensitive and completely fixed in the pelvis. The uterus usually cannot be located definitely bimanually. It is a part of the hard, almost plaster-of-Paris-like exudate, which completely fills the entire pelvis. This exudate extends upwards, downwards and outwards to the sides of the pelvis and is continuous with the mass palpated above. The exudate, pushing down the anterior vaginal wall and causing the posterior wall to be raised upwards and outwards, oftentimes makes it appear as if the immovable cervix lay in a recess or pocket. This description applies to the severer type of the disease. The milder varieties will be considered later.

The pelvic pathology, giving rise to the marked pelvic changes spoken of above, is familiar to you all. Yet it seems necessary to review it hastily in order that we may consider more intelligently the treatment of the condition. If an incision be made through the abdominal wall of a patient presenting the signs and symptoms described above, what will it disclose? The parietal peritoneum usually is not involved in the exudate, although it may be. Beneath the peritoneum, we come to the omentum, adherent to the intestines, sides of the pelvis and possibly to the fundus of the uterus. The coils of small intestine and the omentum are matted together and form the mass which is felt above the pubes. The uterus is lower down in the pelvis and is covered by coils of adherent bowel. The size and condition of the tubes and ovaries vary greatly in different cases. Usually in the severer forms of inflammation, such as we are considering, the tubes at least have become abscess sacs; commonly they are situated low down in the pelvis. However, they may lie at or above the superior strait. These pus-tubes are rolled up in the broad ligament and densely adherent to the intestine, the rectum and sides of the pelvis. The anterior surface of the broad ligament presents as one works from above downward. The uterus, of course, is fixed firmly by these inflammatory masses at its either side and by the adhesions binding it to the posterior peritoneum and loops of bowel. The pelvic cellular tissue is involved in the exudate, but in the nonpuerperal inflammation only rarely is the seat of abscess formation. The pus sacs vary in size in different cases. At times, the tubal walls are thick and contain but a small amount of pus. The inflammation of the surrounding structures, however, may be severe, matting the entire pelvic contents into one mass. Again, the tubes may be very large and thin-walled. Separate portions of one or both ovaries may become infected. These small abscesses may coalesce and form one large ovarian abscess sac. If this be adherent to a pus-tube, a tuboovarian abscess may be formed by the breaking down of the division wall. There may be a single abscess cavity in the tube, or a number, since the tubal walls have a tendency to adhere in places at the early stage of the disease.

It is not necessary to pass in review the various causes of the pelvic inflammatory condition we have been here considering. Suffice it to say that the majority of nonpuerperal cases are due directly to gonorrhea. The gonoccocus, active in the first stage of the process and producing extensive adhesions by its irritating effect upon the pelvic peritoneum, soon is tolerated by the tissues. The organism becomes less active and usually disappears entirely from the contents of the pus sac. Sterile pus is the rule, rather than the exception.

To continue with our imaginary patient with a severe pelvic inflammation: She remains a very sick woman for a number of weeks and perhaps months. The fluctuating temperature and the occasional chill denote the presence of pus. The stomach may become irritable, interfering with proper nourishment and leading to extreme emaciation; the pulse becomes more rapid and weak; the skin is pale and rather sallow and the patient has a septic look. The mass above the pubes still remains hard and tender. Vaginal examination, however, will eventually show softening. The pus seeks the paths of least resistance and finally makes its escape outwards. Usually on account of the close proximity of the pus sac to the lower bowel, the latter's wall is penetrated and the pus escapes by way of the anus. Next in point of frequency comes the vagina, then the bladder, and finally some portion of the abdominal wall. Rupture only occasionally occurs into the peritoneal cavity, so well is the latter protected by the inflammatory exudate.

Recovery may, but does not usually, follow the rupture of the pus sac. The explanation is largely a mechanical one, depending upon just the point in the sac at which the rupture occurs. If this be low down, the sac is completely emptied, its walls collapse and the abscess cavity is obliterated. If, however, rupture be high up, only a portion of the contents of the sac escapes, the opening closes up, the abscess sac again fills up, only to again rupture. Another explanation why recovery does not follow rupture is that only one compartment of a purulent collection has opened outward. This may be drained, but the presence of the others keeps up the symptoms. Again the pus, seeking exit through paths of least resistance, may form long and sinuous tracts, instead of opening directly into bowel or vagina. Here again, drainage is interfered with and the abscess cavity only partially emptied.

I have gone into the pathology of pelvic inflammation at considerable length since the treatment of the condition depends largely upon one's correct interpretation of the pelvic changes that have taken place in the patient under his care. At first, there is a violent inflammation of the appendages with a leakage into the peritoneal cavity by way of the fimbriated extremity of the tube. Evidently the treatment at this stage should be directed toward limiting the inflammation, if such a thing be possible. The patient must be kept in bed and not allowed to get up, even if improvement follow after the first few days of treatment. First of all, the patient will demand that the pain be relieved. This can be accomplished in a measure by hot or cold applications to the lower abdomen and by very hot vaginal douches. Usually, however, some anodyne will be required. Personally, I favor the use of codein, instead of morphin. The former drug is less constipating and does not give rise to as much nausea. It may be given hypodermatically in doses of a grain and a half as often as it may be necessary. A word in regard to the vaginal douche; such a douche as we are considering is for the purpose of relieving the pain and aiding in resolution. It acts as a poultice to the upper portion of the vagina. It must be given in large quantities at a temperature of about 120°. It should be taken in the recumbent position with the patient on the regulation douche-pan. We all know that explicit directions must be given to patients in regard to the taking of the vaginal douche if any good is to be accomplished. The patient's bowels should be kept open with salines and high temperatures kept down by frequent sponge bathing. As a rule, antipyretics should be avoided, as they tend to weaken the heart. Other symptoms should be treated as they arise, being careful to avoid overtaxing the stomach by the administration of a multiplicity of powerful drugs.

If resolution does not occur, in spite of treatment, the physician will have to consider the advisability of assisting nature in getting rid of the purulent collection within the pelvis. We have seen that, left to itself, the case may not go to recovery because good drainage may not be secured, when spontaneous rupture occurs. I am willing to stand firmly in the opinion that the inexperienced physician should not attack such cases as we are considering by the abdominal route. Both the abdominal and vaginal routes have their advocates, but all who have had experience are agreed that the treatment of purulent pelvic collections by laparotomy is difficult and attended by quite a high mortality. Let the practitioner who is ambitious to do all kinds of abdominal surgery begin with easier cases than the enucleation through the abdomen of pus sacs adherent to omentum, intestines and pelvic structures. I do believe, however, that the practitioner can approach the pus collection by the vaginal route with minimum danger and maximum good to his patient.

As we have seen, the natural tendency of the pus-tube and ovarian abscess is to sink lower in the pelvis. Thus they come to lie in close proximity to the rectum and posterior vaginal wall. It is through this latter that the incision should be made. When should the abscess cavity be opened and how are we to judge whether the pus-tube be situated low down or high up? I find that it is the prevalent opinion among the practitioners who call me in counsel that no opening should be made through the culdesac until fluctuation can be detected. This idea, I believe, is erroneous. The patient can be relieved days, and even weeks, in advance of the time when fluctuation can be detected. We must remember that there is an inflammatory exudate around the pus sac. While the cellular tissue is not involved to any great extent and the main suppurating focus is within the tube, the surrounding inflammation is enough to mask the signs of fluctuation for a considerable period. However, we do not need to depend upon this symptom as an indication that the time has come to evacuate the pus. Tenseness in the culdesac, with the systemic signs of pus in the pelvis, are plain indications that the pus should be evacuated. The higher up the pus collection, the greater will be the suprapubic tumor and tenderness. Conversely, a low position of the pus-tube means induration, swelling and tenderness encroaching on the rectum and posterior vaginal wall.

Having determined that the time has come for evacuation of the pus through the vaginal route, the patient should be prepared for the operation in the usual manner. After being anesthetized, the buttocks should be drawn down well over the edge of the table. The posterior vaginal wall is drawn downwards by the depressor. The posterior cervical lip is caught with tenaculum forceps and drawn sharply upwards, thus making tense the posterior culdesac. The mucosa should be cut through with either knife or scissors in a horizontal direction. This cut should be at least two and one-half inches and just at the junction of the cervix with the vaginal wall. Then, still keeping the cervix drawn upwards, the depressor is withdrawn and the finger of the left hand is passed upwards along the posterior surface of the uterus. Considerable force may have to be exerted before the indurated tissue can be penetrated by the finger. A boring movement answers better than an attempt to push the finger directly upwards. It is well to hug the posterior surface of the uterus, thus avoiding the rectum. Soon the finger will penetrate the pus sac or sacs and there will be an escape of pus. Then the forefinger of the other hand should be introduced and the two forefingers separated, thus enlarging the opening. The cavity should be washed out gently with sterilized water. Do not force the finger upwards after the abscess sac has been opened. The operation up to this point has been extraperitoneal since the peritoneal cavity has been shut off by adhesions and exudate. If, however, the peritoneal cavity is opened, no harm will probably result as the pus is sterile in the majority of cases. The abscess cavity and vagina are packed lightly with gauze and the operation is complete. The gauze is removed at the end of thirty-six or forty-eight hours and may require repacking for about a week in order to secure good drainage. The abscess cavity collapses and heals readily or slowly according to the thoroughness with which the pus has been evacuated. At times there is a complete cure. At other times, the appendages are reinfected and a cure only results after their removal by an abdominal operation.

The question may be asked, what about the less severe cases where there is no large collection of pus. Suppose there is considerable exudate around the tip of the appendage, but upon opening the culdesac, no pus is found. No harm has been done. The breaking up of the adhesions aids in resolution and benefits the patient.

Repeated attacks of pelvic inflammation oftentimes call for abdominal section and radical removal of the appendages and possibly of the uterus.

It only remains to consider the lesser degrees of inflammatory disease of the pelvis. I refer to cases where the tubes and ovaries are enlarged, thickened and adherent to each other, the sides and bottom of the pelvis. Yet these appendages contain but little, if any, pus. The inflammation may be subacute from the beginning. Bimanual examination reveals the appendages on one or both sides of the uterus enlarged, sensitive and adherent. The uterus may be in its normal position, but usually is backward and somewhat enlarged. These are the cases that try the souls of the practitioner. Except when they are subject to unusual pain and distress, such patients are not confined to the bed, but drag themselves about, at times more dead than alive. Local treatments through the vaginal vault relieve but seldom cure. Among the best palliative measures, may be mentioned hot water douches, counterirritants to the abdomen and the use of tampons soaked in ichthyol and glycerin, one to ten. These should be inserted at the physician's office two or three times a week and retained in place for about eighteen hours, when they should be removed and a hot douche taken. If the patient grows worse instead of better under such treatment, an abdominal section is indicated. The appendages may be either released from their adhesions, resected and retained in position, or removed in case they be hopelessly diseased.

II.—PUERPERAL PELVIC INFLAMMATION.

The appendages and pelvic cellular tissue are apt to be the seat of purulent inflammation after septic abortion or septic endometritis following labor at full term. While the gonococcus may play a certain rôle in the inflammation, other germs like the staphylococcus and streptococcus are largely responsible for the inflammatory symptoms. Septicemia and death are more liable to follow such inflammation because the peritoneum is unable to take care of the products of inflammation caused by these more virulent microorganisms. The germs from the septic uterus are absorbed readily by the cellular lymphatics during the puerperal state. For this reason, infection and abscess of ovaries and cellular tissue are much more common than in the nonpuerperal condition.

As regards treatment, in the main, it is the same for the puerperal and nonpuerperal patient. It is, however, much more important to open abscesses arising during the puerperium by the vaginal route. The contents of a nonpuerperal pus-tube only exceptionally give rise to general peritonitis, while the reverse is true in purulent collections following labor or abortion. Therefore, it is necessary to use the greatest precautions not to open the peritoneal cavity when evacuating such pus collections. Be satisfied with opening the sac and do not break the adhesions shutting off the peritoneal cavity. Where a true pelvic abscess exists in the cellular tissue, it can be opened easily through the culdesac. In the puerperal state, the subsequent course of the case, even after the evacuation of the pus, is much more erratic than with the nonpuerperal patient. Relapses are frequent and the cause of much anxiety. Later on, it may be found that the appendages are so diseased that the only hope of cure lies in their radical removal.

ORIGINAL ABSTRACTS.

MEDICINE.

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AND
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LEUKANEMIA.

Leube recently proposed the name leukanemia for a group of blood diseases, characterized by a blood picture combining the features of pernicious anemia and leukemia. In Leube's case, a ten-year-old boy had a combination of pernicious anemia and mixed-celled leukemia with a proportion of one leukocyte to twenty-four red cells. The course was rapid and showed slight hemorrhagic diathesis. Postmortem, there was red marrow in the long bones, myeloid change in the spleen follicles, myelocytes in the liver-capillaries and polynuclear, peri- and intraacinous foci in the liver; normoblasts and a few magaloblasts in the bone-marrow; no siderosis. Charcot-Leydon crystals did not form in the bone-marrow. Leube rejected both simple pernicious anemia and ordinary leukemia, on account of the clinical and anatomical findings, and considered the process as a severe, probably infectious change in the formative processes of blood cells in the bone-marrow, affecting both reds and whites so that they remain immature, the leukocytes not becoming granulated, and ending in complete annihilation of blood-formation, and consequently in death.

Aside from Leube's case it is difficult to find precisely similar ones in the literature, though one of Koermoeczi and an older one of Litten probably belong to the same group. Luce (*Deutsches Archiv fuer klin, Med.,* Band LXXVII, page 215) reports one in which a very thorough study was made. The patient was a woman of forty years, previous history negative. After an acute pharyngitis, a simple anemia developed, and in a month the blood showed an increase of lymphocytes. The anemia progressed, the leukocytes became more numerous, with preponderance of nongranulated, mononuclear cells, and by the end of six weeks the blood showed a combination of simple anemia and lymphatic leukemia; red cells 1,652,000; leukocytes 81,600; hemoglobin 35. Hemorrhagic diathesis gradually developed, and by three and one-half months the blood showed the features of pernicious anemia besides lymphocythemia, and this condition persisted until death, two months later. Retinal hemorrhages and cardiac murmurs occurred. The lymphatic glands in the neck reached the size of hen's eggs, but the glands were not enlarged in other parts of the body; the liver and spleen became enlarged only in the last month. Autopsy showed intense anemia, fatty degeneration of the heart, parenchymatous degeneration of organs, hemorrhages in the brain and the serous membranes, red marrow in the long bones of the lower extremities, no enlarged glands except in the neck. The liver, kidneys and heart showed extensive leukemic infiltration, the spleen and some cervical glands and the marrow of the long bones a lymphadenoid metaplasia, with megaloblasts. There was no siderosis or amyloid degeneration.

Luce thinks that such cases should be placed among leukemic bone-marrow diseases, notwithstanding the absence of eosinophilia and of Charcot-Leyden crystals. Along with Pappenheim, he ascribes the anemia to myelogenous disease, properly rejecting the view that there is anything absolutely characteristic of pernicious anemia in the blood picture, and admitting that the pernicious anemia of leukanemia differs only quantitatively from the anemia found constantly in all forms of leukemia. He also points out that the absence of siderosis is not only an important differential point in the determination of the cases, but proves that in leukanemia the anemia is myelogenous and not hematogenous, though later on he admits some doubt in this feature.

Luce adds to the group of cases a posthemorrhagic case of Ewald's, and Ehlich and Lindenthal's case of nitrobenzol poisoning, and he points out the resemblance in Bettmann's well-known experiments with arsenic and in the so-called pseudoleukemic anemia of infants. He concludes from a broad study of all the available material that leukanemia is not a distinct disease, but only a blood symptom, one of the morphologic expressions with which the blood can react to various injuries, such as hemorrhage, intoxication, infection and new-growth. "There is no fundamental qualitative difference between anemic and leukemic bone-marrow reaction." Leukanemia may be hematogenous, as after hemorrhages, and probably only in this way; it may be mixed hematogenous and myelogenous, as in cases of infection and intoxication, or it may be purely myelogenous, as in myelomatosis or lymphomatosis of the bone-marrow. Luce therefore differs from Leube regarding the latter's view of his own case, and, regarding the problem of leukanemia as identical with that of leukemia, thinks that the latter is included in the larger problem of tumor formation, though he admits the possibility of lymphatic hyperplasia being caused by infection. The article is one that should be studied in the original by all who are especially interested in the problem of blood diseases. G. D.

SURGERY.

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THE RESULTS OBTAINABLE BY OPERATIVE MEASURES IN AFFECTIONS OF THE STOMACH.

A paper bearing this title was read before the Philadelphia Academy of Surgery, by Doctor John B. Murphy, of Chicago, and published in the December number of the *Annals of Surgery*. The order in which diseases of the stomach are brought to the attention of the surgeon is as follows: Gatsric carcinoma, gastric ulcer, pyloric obstruction, pyloric retention, gastric deuodenal and pylorodeuodenal lesions. The order in which he should be consulted will be that of pyloric retenion, pyloric obstruction, gastric ulcer, gastric carcinoma and gastrodeuodenal lesions. Careful attention to the first three of the last classification makes it less necessary to consult the surgeon for carcinoma of the stomach, thirty-five to forty-five per cent of all carcinomata at present occurring in the stomach. The writer believes that Mayo's results, fifteen and five-tenths per cent mortality, will scarcely be improved upon by technique. He believes that improvement in surgery in carcinoma of the stomach must come from removal of the conditions which tend to produce the disease, by pronounced improvement in our diagnosis and early radical removal. There are precancerous conditions which can be recognized and properly treated, such usually require operation. In the presence of suppressed pathological conditions, the abdomen should be opened and, if possible, should be relieved by prompt operation. He believes that the surgical treatment of pyloric obstruction and retention affords great relief to the patient and is quite free from danger. He believes that death is due primarily to the low condition of the patient at time of operation. Exploratory gastrotomy will be the ideal procedure when the diagnosis is made at an early stage, before there has been opportunity for the transmission of the disease from its original focus into the neighboring lymphatics. The point of invasion is usually quite easily determined, because carcinoma usually attacks the area which can be exposed to the eye for examination—sixty per cent in the region of the pylorus, eleven and one-half per cent in the lesser curvature, four and seven-tenths per cent in the posterior wall, and about three per cent in the anterior wall. It has been estimated that four to five per cent of the human race have gastric ulcer, and that one-fifth of these die from conditions directly associated with ulceration, carcinomatous changes being found in the ulcers or the scars which follow. Carcinoma may also be induced by retained stomach contents due to pyloric obstruction. These conditions may be treated by gastroenterostomy. He then proceeds to give a list of gastroenterostomies by different individuals and the per cent of fatalities and cures which have attended these operations, varying all the way from three and eight-tenths to sixty-five per cent. A review of the methods employed is given and the kind of operations performed. The author seems to have a preference for the posterior method of gastroenterostomy and the use of the Murphy button. He also presents statistics to show that this button is preferred by a large number of operators. After reviewing some of the methods employed by different operators and their opinion regarding the advisability of the operation, he shows conclusively by statistics gathered from the experience of prominent surgeons that the mortality in stomach operations is rapidly decreasing. The paper contains very carefully arranged statistics on these points of the work mentioned to the present date. C. G. D.

GYNECOLOGY.

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SHOULD THE UTERUS AND OVARIES BE REMOVED IN OPERATING FOR DOUBLE PYOSALPINX?

Carlton C. Frederick, Buffalo, New York (*American Journal of Obstetrics*). The patient who has a pair of pus-tubes is usually an invalid. Pain is almost constant, and fever, emaciation and anemia are common to a large percentage of them. Sterility and suppression of sexual feelings are the rule and if the latter does not exist, the pain produced by coitus is almost unbearable. Dysmenorrhea is almost universal and increased menstrual flow is very common. Leucorrhea is nearly always present in acute cases but is often absent in cases of long standing. It is evident that some operation is necessary for the relief of these conditions.

The history of operative procedure in these cases has passed through three well-defined periods:

(1) As practiced by Tait, removal of tubes and ovaries, leaving the uterus. Many of these cases were not cured, due, probably, to a piece of infected tube being left in connection with the uterus. A secondary operation was often performed to remove the uterus.

(2) Removal of ovaries, tubes and uterus either by abdominal or vaginal incision, in all cases of double pyosalpinx. The removal of all the organs of generation brings about an early menopause with all its coincident nervous disorders. The woman is, of course, rendered sterile.

(3) The author advocates the removal of all diseased tissue but thinks it unnecessary to remove a tube, ovary or uterus which is not hopelessly diseased. Disease of the tubes is usually secondary to an endometritis, but inflammation in the tubes is more severe than in the uterus. If the tube is removed the uterus will, as a rule, take care of itself. If the ovary is diseased, remove all the diseased tissue but leave

behind any normal ovarian tissue, be it ever so small, to prevent an early menopause. In removing the diseased tube, it should be taken out in its entirety, dissecting out a V-shaped piece at the uterine horn.

"We should not remove the uterus if it can be retained; we should not remove any more ovarian tissue than necessary, but we should remove the tubes *in toto.*" C. L. P.

OBSTETRICS.

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A CASE OF INVERSION UTERI PUERPERALIS, REDUCED BY A MODIFIED KUESTNER'S METHOD.

Max W. Myer, M. D., of Columbia, Missouri (*American Gynecology,* November, 1903) reports a case of chronic inversion of the uterus and describes the operative procedure for the relief of the condition. The patient was twenty-three years of age. Her family and personal history were negative. She was sent to the Parker Memorial Hospital on account of profuse hemorrhage, which her physician diagnosed as due to inversion of the uterus. She was married in March, 1902, and had an abortion the following June.

On July 23, 1903, the patient was delivered instrumentally of a living child. The placenta was removed manually. During the first week after delivery, the patient bled very profusely. The hemorrhage then ceased almost entirely, but ensued again the third week, after she left the bed. The patient then noticed something protruding from the vagina. When she entered the hospital on August 29, 1903, she was very weak and anemic, hemoglobin fifty per cent. Vaginal examination showed a tumor of a pale reddish color, the size of a goose egg, about an inch above the introitus. This tumor was exquisitely painful to touch and examination caused hemorrhage. The finger could be passed between the vagina and the tumor. A collar could be felt about the mass at the vaginal fornix. Bimanual examination showed a funnel-shaped depression above the pubes. Diagnosis of chronic inversion of the uterus was made.

On September 3, examination under anesthesia confirmed this diagnosis. An unsuccessful attempt was made to reinvert the uterus manually. After manipulation for half an hour, it was decided to employ a modified Kuestner's method.

A transverse incision was made in the posterior culdesac, three centimeters in length. The posterior lip of the cervix was grasped by two volsellum forceps. The index finger of the left hand was inserted through the incision and an attempt made to dilate the constricting ring from above. This was unsuccessful and an incision was made in the median line of the posterior lip of the cervix, extending through the posterior wall of the uterus to the fundus. The uterus was now easily reinverted by pressing on the anterior wall with the thumb. The incision was closed by stitches passed through the uterine tissue down to, but not including, the mucosa. The uterus was then replaced and the vaginal incision closed. Recovery was uninterrupted and the patient left the hospital on the thirteenth day. The uterus was retroverted.

The first method which should be attempted in reinverting the uterus is manual replacement. This method is effective in very few cases of chronic inversion. The spiral spring is not of much value. The colpeurynter, while giving good results in many cases, was not used in this instance because of the excruciating pain of manipulation, the profuse hemorrhage caused by the least pressure and the fact that she had a temperature of 100.4°, though every precaution was used to prevent sepsis.

Operation through the abdomen with an attempt at dilating the ring from above is no longer employed. Vaginal operation is better and simpler. One of the first operations devised consisted of making cervical incisions to avoid dangerous lacerations, but there is always a possibility of the incisions tearing farther, making control of hemorrhage and repair of incisions difficult. Incisions will be of no avail if adhesions are present. Kuestner attempted to dilate the ring from above after making a transverse incision in the posterior culdesac. If this failed, he made an incision in the posterior wall of the uterus from two centimeters above the external os stopping two centimeters below the fundus. The method employed in this case was very similar, the long incision being made at first.

One of the chief disadvantages is the tendency to retroversion. This can be avoided in the majority of cases by seeing that the uterus is in the normal position at the close of operation and retaining it there during convalescence. Making the incision in the anterior wall of the uterus offers more danger of injurying the neighboring organs, although the uterus is held forward.

The dangers of subsequent pregnancy after this operation are the same as after Caesarean section and the patient should receive the same care and attention. Hysterectomy is an extreme measure in these cases and is justifiable only when all simpler methods have failed.

A. P. R.

PEDIATRICS.

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ATTENDING BABINSKI'S PEDIATRIC CLINIC.

PHYSICAL CULTURE.

James A. Gilbert (*Journal of the American Medical Association*, May 31, 1903) says education should do more than to mentally develop the child. The task is a difficult one on account of the inadequate facilities for gymnastics. The advantages of a gymnasium are brought out in a comparison of the lung capacity of children in public and private schools. The writer tested the lung capacity of the school children of New Haven ranging in age from six to seventeen years, the data being based on one hundred children for each age without the advantage of a gymnasium. His findings were compared with those of W. G. Anderson, taken from children in the private schools of New York, who underwent a daily training in the gymnasium. The children examined by the latter had an average smaller lung development at the age of six, but the increase in development of these children was so rapid that at the age of fifteen the private school boys had an average lung capacity greater than that of the average school boy of seventeen, and in girls the difference was more noticeable. A child who is inclined to be overstudious should be induced to become interested in some form of systematic exercise, especially outdoor sport, and should be given instruction in a fully-equipped gymnasium.

OPHTHALMOLOGY.

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THE PRESENT STATUS OF SUBCONJUNCTIVAL INJECTIONS IN OPHTHALMIC THERAPEUTICS.

Charles S. Bull (*Medical Record,* July, 1903) reviews the literature on this subject for the past seven years. He concludes that the efficiency of these various solutions injected beneath the ocular conjunctiva cannot be ascribed to the increased local acceleration of the lymph currents, the so-called leukocytosis, nor to the antiseptic action of the remedies employed, since the presence of such processes cannot be demonstrated in the tissues of the eye following the injections. The chief change seems to be in the composition of the aqueous humor.

Sodium chloride, sublimate, mercuric cyanide, and hetol of varying strength were tried. No important differences in mode of action or effect were seen between salt solutions and those of mercuric cyanide. The latter, even when cocain or acoin were added to the (one to five thousand) solution before injection, always caused a great deal of reaction, severe pain, and conjunctival inflammation, and was followed by persistent chemosis and hypersensitiveness of the conjunctiva. Hetol (sodium cinnamate) was used in a one per cent solution, half a gram being injected, after cocain, at first every other day. It "seemed to influence favorably the course of the disease in herpes and interstitial keratitis," to be of benefit in hastening absorption in acute uvetitis, and to be of no use in chronic cases, notably in scleritis.

Bull concludes that this method does not "bring about any more rapid or favorable results than those we have hitherto employed in affections of the cornea, uveal tract, or retina." In orbital cellulitis bichlorid (one to one thousand) did exert a very favorable and unusually rapid effect in hastening the suppurative stage.

All reports of the beneficial effects of subconjunctival injections should be carefully criticized and compared with the results obtained by other methods of treatment before accepting them as of any real value.

LARYNGOLOGY.

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SOME REMARKS ON HAY FEVER BASED ON THE LITERATURE OF THE PAST YEAR.

THE subject of hay fever is as perennial as the flowers which are said to produce it. The spring and autumn crop of victims is followed by a harvest of articles which give new theories as to the causation, and certain cures. This has been the experience for years. During the past year a number of contributions have been made to this subject, but none have attracted such widespread interest as those of Professor Dunbar, of Hamburg, and his followers. Since the days of Bostock, early in the last century, any number of observations have been made on those individuals subject to this peculiar vasomotor rhinitis. It is generally held to be a neurosis with an exciting cause, which cause is believed to be the pollen of certain plants. Closely allied to this form we have the hyperesthetic rhinitis, which is excited by atmospheric changes, emanations from animals, chemicals or other irritants.

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While these and other facts have been known for years it was left for Professor Dunbar to give some very interesting results from experimental study. In a pamphlet entitled "The Cause and Specific Treatment of Hay Fever," published in the fall of 1902, he reports his success in isolating from the pollen of certain grasses a toxic material which when instilled into the eyes and nostrils of hay fever subjects, produces the symptoms characteristic of the disease. This effect is observed a few moments after a small quantity is applied to the mucous membrane. It is interesting to note that persons not predisposed to hay fever are immune to this toxin.

Professor Dunbar, in an article entitled "Zur Frage betreffend die Aetiologie und Specifische Therapie des Heufieber" (*Berliner Klinische Wochenschrift,* 1903, Numbers XXIV, XXV, XXVI), gives the result of further experimentation with the toxin and the method of production of an antitoxic serum. The disease, in Hamburg, begins the latter part of May, or the first part of June, and lasts from six to eight weeks. He rejects the theory of Blakely, that all varieties of pollen act as an exciting cause, as well as the theory that it is of germ origin. He has also satisfied himself that it is not an infectious disease. After a large number of experiments he found that the pollen from the flowering grasses would excite the disease in suscptible patients. Of the pollen of fifty different plants, not grasses, he was unable to produce reactive symptoms in hay fever patients. All of the twenty-five different pollens of grasses examined produce active hay fever symptoms in susceptible patients. Beside the grasses, the pollen of rye, barley, wheat, corn, rice and many other cereals produce irritation. Twenty-five hay fever patients all reacted to the irritating effects of these pollens. On forty normal persons no effect was observed. The toxin could not be obtained from the pollen of roses, but was isolated from the pollen grains of the lily of the valley.

The pollen toxin has been found to be an albuminous substance very poisonous to hay fever subjects. Violent reaction is produced by one-fortieth milligram applied to the mucous membranes. Experiments prove that the starch found in the pollen is not the exciting cause, neither is it enzymic in nature. Professor Dunbar, after proving that small quantities of this toxin produced poisonous symptoms when injected into animals, proceeded to produce an antitoxin by injecting the toxin into susceptible horses. He found that the serum had antitoxic properties after four weeks, four injections having been administered. A drop of toxin mixed with a drop of horse serum possessing antitoxic properties produces no irritative effect when dropped on the mucous membrane of hay fever patients. The antitoxin has been found to relieve the irritation of the eyes and nose produced by the toxin. In one subject the subcutaneous injection of one cubic centimeter of antitoxin gave freedom from an attack of hay fever during the day. Another peculiarity of the antitoxin is that it is entirely inert on normal human beings when injected subcutaneously, but when injected into forearm of hay fever subjects, it gives rise to disagreeable irritation and swelling. These symptoms may last for six days. Repeated injections seem to produce a certain immunity to the irritating effects. Local applications to mucous membranes of the serum do not produce irritation.

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Sir Felix Semon, in the *British Medical Journal,* March 28, 1903, reviews some experiments which he has made with Professor Dunbar's toxin and antitoxin. He had the toxin and antitoxin prepared by Professor Dunbar, and the aid of Professor Dunbar's assistant, Doctor Prausnitz. He experimented with a number of normal and susceptible patients. His conclusions may be briefly stated as follows:

He accepts Professor Dunbar's toxin and antitoxin as a cause of the characteristic subjective and objective symptoms of the disease.

As a rule the toxin in normal persons does not produce any symptoms.

The effect of the toxin varies, but it certainly produces immediate disappearance of the subjective, and in a few minutes great amelioration of the objective symptoms.

Equal parts of the toxin and antitoxin neutralize each other.

So far most of the work has been of a laboratory nature, and Doctor Semon says that it is impossible to foretell whether by the prophylactic application of a very powerful serum we shall succeed in altogether preventing the actual outbreak of an attack in those specially predisposed.

In a brief article on "Some Further Experiments Regarding the Nature and Specific Treatment of Hay Fever" (*British Medical Journal,* April 18, 1903) Doctor Semon says that there seems to be a class of persons not suffering from hay fever, who are more susceptible to the influence of the pollen toxin than the great majority of persons experimented upon. It remains to be proven whether there is a connection between genuine hay fever and vasomotor coryza.

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In our own country, Doctor Emil Mayer (*New York Medical Journal,* August 8, 1903) reports that he finds the Dunbar antitoxin efficient in the spring form of hay fever. He thinks the conclusions of Dunbar well supported, and makes the suggestion that a similar antitoxin be found for the autumnal cases.

Doctor MacCoy, in the *New York Medical Journal,* November 21, 1903, reports finding, in fifteen cases experimented upon, that the effect of the antitoxin was promptly manifested and relief complete.

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Summing up the work of the year it would seem that a real advance had been made toward settling the hay fever problem, yet there are many points that are difficult to explain by Dunbar's theories. The neurotic element plays a very important part. One has only to recall the case cited by Doctor John N. MacKenzie, of a patient who had a typical hay fever attack by the smelling of paper roses. We must also remember that emanations from animals, odors of drugs and chemicals sometimes excite an attack of vasomotor rhinitis hardly distinguishable from hay fever. It may be necessary to subdivide these cases into groups—those due to a toxin, and those of a neurotic vasomotor origin.

Besides the articles along the above mentioned line, we have the usual number which assign various causes for the disease and suggest many methods of treatment. Suprarenal extract, or its active principle, still holds high rank for its palliative effect. Kyle believes that the altered chemical composition of salivary and nasal secretions has much to do with the cause of hay fever. His recent article in *The Laryngoscope* (September, 1903) is interesting and instructive even though it is not wholly convincing.

DERMATOLOGY.

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ERYTHEMATA AS INDICATORS OF DISEASE.

DOCTOR JAMES GALLOWAY, M. D., F. R. C. P., in his presidential address before the Dermatological Society of Great Britain and Ireland (*British Journal of Dermatology,* 1903, XV, page 235), quite thoroughly reviews this subject, comparing the classification of Willan, Colcott Fox, and Crocker.

Willan bases his division on the fact of its occurrence in contagious disease; Fox divides the erythemata into idiopathic–due to local irritation, and symptomatic—due to internal causes; while Crocker divides them into two main groups—one the result of hyperemia only, the other due to actual inflammation, and claims that a large proportion of both classes are of toxic origin.

Galloway also makes two groups—one the result of simple transient hyperemia leaving no permanent change in the skin, and the exudative erythema in which transudation and exudation as well as actual inflammation changes in the structure of the skin occur—one likely to be of some duration and in certain cases permanent.

Of the first group the most characteristic example is ordinary flushing, yet marked vascular disturbances may be associated such as tachycardia. In some cases the pulse is rarely below 100, and sometimes reaches 150 to 160, while when there is congestion of extremities the pulse rate may be as low as 40. Such patients usually suffer from chilblains. Doctor Galloway thinks that some of these cases, through functional failure to regulate the expansion and contraction of arterioles, may cause the condition described as "erythema induratum," and in severe cases the edema of the cutis, associated with paralytic distension of the superficial capillaries, may end in necrosis and ulceration.

Such a case was reported by the author in the *British Journal of Dermatology,* page 199, 1902. The patient, a young woman, suffered for twelve or fifteen years from an almost constant congestion of the cutaneous surface. There was tachycardia, and the formation of an extraordinary amount of fat throughout the body. The slightest injury produced nodules like erythema induratum on the skin, which necrosed and ulcerated in course of time. After several years of almost complete invalidism, there suddenly developed a gangrenous process of the whole left breast, which was preceded by severe pain, but insensitive to touch. The gangrene extended to the side of trunk and death followed in four days. There were no gross lesions. The most noticeable feature of the histological examination of the skin was the enormous dilation of the blood-vessels in the corium. The case shows that simple forms of erythema may pass on to true exudative lesions.

Galloway also describes the peculiar polycylic erythema with cutaneous edema found in two cases of trypanosomiasis seen by him at the School of Tropical Medicine. The eruption was faint circinate erythema on an edematous skin, leaving some pigmentation—an appearance quite different from that of any other erythematous disease.

The most common type of exudative lesions are found in erythema polymorphe due to toxins produced as the result of improper food, poor digestion or assimilation.

Galloway refers extensively to the cases reported by Osler which emphasize the close relationship between the erythema group and serious visceral affections, and he likewise dwells upon the relationship of erythema polymorphe and lupus erythematosus.

PSYCHIATRY.

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RESPIRATORY ACTION IN HEMIPLEGICS.

Doctor L. Pierce Clark (*American Journal of Mental Sciences,* December, 1903) describes a clinical symptom of hemiplegia that is of considerable diagnostic importance. He says the present accepted opinion of the respiratory movements in hemiplegics is well stated by Gowers, who says that "The two sides of the thorax move equally in ordinary respiration, but if the patient takes a deep breath and brings into action the extraordinary muscles of respiration the half of the thorax on the paralyzed side often expands less than the other. Thus, some muscles are completely paralyzed, others are merely weakened, others are apparently unaffected." These rules are based upon Broadbent's hypothesis that bilaterally-acting muscles are represented bilaterally in the cerebral cortex. There is a failure to note, however, that the movements on the sound side in extraordinary respiration are always greater.

In 1895 Hughlings Jackson stated that the superior intercostals play a more or less constant role in the syndrome of hemiplegics, contrary to the universally accepted opinion as given in quotation from Gowers. He believed that in ordinary or automatic respiration the amplitude of superior intercostal movements was greater on the paralyzed side than on the other; while in volitional (cerebral) movements, such as that of forced or conscious or extraordinary respiration, the usual law of greater movements of the sound side would be found. To substantiate this he reported observations on twenty-eight cases of old and recent hemiplegics, in which the greater number of cases (eighteen in twenty-eight) proved the accuracy of his theory. Recently Doctor Clark has reexamined some cases that were thought to negative the law but after giving attention to the necessary technique he found there were no exceptions. He has furthermore examined one hundred sixty-one cases of hemiplegia in the Craig Colony, in hospitals and at the Vanderbilt Clinic in New York to make certain the constancy of this respiratory symptom. One hundred twenty of the cases of the series were examined by him and the others under his direction. The value of the sign if present in all destructive capsular lesions is obvious. He finds the sign uniformly present without apparent relationship to age, character, duration or severity of capsular lesion aside from its being hemiplegic in range. The double change (first, overaction on paralyzed side in automatic respiration, and the second shown in the converse in extraordinary or volition respiration) was very marked in some and very slight in others; the difference, however, was only one of degree. In all cases the symptom can be detected by palpation, and in most cases even by inspection alone. He explains the phenomenon as follows: In destructive lesion of the internal capsule causing paralysis, hemiplegic in character, the cortical inhibitory control over the medullary respiratory centre of the paralyzed side is destroyed in great part, at least, much more so on the hemiplegic side than to that centre presiding over the sound side; in consequence of this withdrawal the uninhibited medullary centre overacts in ordinary or automatic respiration, hence the excess movements on the paralyzed side. In forced conscious or volitional (cerebral) respiration the movements on the opposite side are greater.

W. G. Spencer has demonstrated by electrical stimulation of the cortex in monkeys that slowing and final arrest of respiratory rhythm was produced by excitation of the cortex just outside the olfactory tract in front of the point where it joins the temporosphenoidal lobe. Spencer further shows an acceleration center apparently located in the posterior portion of the sensory-motor area of the cortex which must remain intact and operative in hemiplegics. The location of the inhibitory centre is such that its damage would be expected in vascular lesions, especially of the middle cerebral artery affecting the capsular fibers.

These symptoms described by Doctor Clark may be of much value in differentiating hemiplegia from uremic or alcoholic coma, epilepsy and hysteria.

NEUROLOGY.

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SUGGESTIVE THERAPEUTICS.

IN the *Journal of the American Medical Association* for January 16, 1904, Doctor H. W. Loeb, of Saint Louis, publishes a series of cases of hysterical aphonia cured and cured promptly by the simple expedient of enforcing suggestion by putting his finger down the throat and unhesitatingly promising to cure the aphonia. In Doctor Loeb's own words:

"In the last cases I have said nothing about the condition found; I simply look at the larynx and say that I will be able to cure the trouble. One case is of at least two years' standing. The pharynx is not always anesthetic, but it is often so in hysterical cases. As to the discomfort resulting from the treatment there is, of course, no pain, but only an impediment to respiration. I occlude the larynx until there is a distinct impression from the suffocation, then withdraw the finger and command them to speak and they simply cannot help talking. I hope the members will use this method with caution, not to use a suggestion that may be duplicated and do the patient harm."

In the same general line is an excellent article on "Emotional Disturbances" by Doctor H. T. Pershing, of Denver (*Journal of the American Medical Association*, January 30, 1904). Pershing advocates the plan of teaching the patient to suppress the natural motor expression of his emotional state and, by an effort of the will, imitate the motive expression of the opposite state.

"The most brilliant success often follows the application of this principle to the treatment of hysterical attacks, providing the patient is mature enough and reasonable enough to make a vigorous effort. Convulsive hysterical attacks, both minor and major, are exaggerated emotional disturbances whose motor reaction is largely in the voluntary muscles, especially those of respiration. Let the patient note the first premonition of the attack and she will find that respiration is becoming rapid, shallow and jerky. It must be made slow, deep and regular by sheer force of will. When respiration has been attended to the muscles of the trunk and limbs will probably be found excessively contracted; each group must be voluntarily relaxed and then the breathing attended to again."

In discussing Doctor Pershing's paper Doctor Hugh T. Patrick, of Chicago, added some exceedingly wise suggestions. He said:

"I am in hearty accord with the principles and technic indicated in this paper, and would only add one point, and that is, the supplanting of a good idea for a bad one, or the removal of a fear by a process of demonstration. The mere suggestion or statement of the physician is often not sufficient. We must institute a process of education, and there is nothing better for that purpose than a plain demonstration. Frequently I take a patient who is convinced that he has heart disease for a vigorous run up two or three flights of stairs, or make him run a number of times back and forth the length of my office, in order to show him that he has a perfectly competent heart; to convince him that he cannot have heart disease and do what he has done. Then we see the man who complains that his food remains in his stomach for two or three days; that he feels it there. I instruct him to eat a hearty dinner at 6 or 7 o'clock, and the next morning I wash out his stomach, demonstrating to him that the stomach is empty, and hence takes care of his food better than he thought. Then we have the patient who says he does not sleep. I instruct him to go home and stay up all night, and report to me the following morning. He does so, perhaps not having slept at all. I then instruct him to stay awake all day and the following night, and I usually find that he is unable to do so. When such a patient finds that he absolutely cannot stay awake for two nights in succession, he will make up his mind that he is not going to die from loss of sleep."

THERAPEUTICS.

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INTESTINAL ANTISEPTICS: THEIR USES AND LIMITATIONS.

Jacob A. Storck, M. D., of New Orleans (*The Journal of the American Medical Association,* December 26, 1903), after mentioning names of investigators whose labors have resulted in the theories we have today of fermentative and putrefactive change in food, and of autointoxication, goes on to mention one after another various drugs that have been used by the medical profession to bring about an antiseptic effect within the intestines. The first one taken up is carbolic acid, and concerning this drug the doctor says: "For my own part, I have eliminated this agent from among those which I use as intestinal antiseptics. In small doses it is not effective, while in large doses it irritates the mouth, esophagus and stomach, causes gastritis and inhibits the activity of ptyalin and pepsin."

Beechwood creosote in doses of ten to fifteen minims in capsule or emulsion is safer than carbolic acid. The best results are obtained when the creosote is administered from one hour to one hour and a half after eating.

Guaiacol depresses and is not particularly effective at best. Guaiacol carbonate, however, in five to ten grain doses, is often valuable.

Resorcin formerly held a high place as an intestinal antiseptic, especially in treatment of fermentative conditions in the intestines during infancy and childhood, but it has lost its place on account of its deleterious action on the kidneys.

Salol contains thirty-six per cent of phenol and for this reason is liable to cause symptoms of carbolic acid poisoning.

Benzoic acid being less irritating than salicylic acid, and at the same time possessing much the same properties, should take the place of the latter much oftener than is the case.

Creatin, while effective, is dangerous.

Naphthalin and naphthol are useful when contents of bowel are in a state of putrefaction, but of no use when walls of intestine are at fault, as in typhoid fever. These drugs should not be used when the urinary tract is diseased.

Thymol, while destructive to putrefactive organisms, is apt to irritate the kidney.

Ichthyol, one to four grains to the liter of water, is valuable in colon irrigation.

Eucalyptol is worthless. Tannic acid, while well adapted to colon irrigation, is apt to cause indigestion when used by the mouth.

Hydrogen peroxide is useful in any condition of lower bowel where pus is present.

Acetozone gives promise of efficiency. It is a superior germicidal agent.

Quinin in enemata and by the stomach is a valuable antiseptic. The former particularly in amebic dysentery.

Among other intestinal antiseptics mentioned by Doctor Storck are bismuth, carbon disulphid, oil of turpentine, formaldehyd, and silver nitrate.

In conclusion Doctor Storck says:

"(1) Never lose sight of the patient.

"(2) Holt says that no matter how much we believe in drugs, if they continue to disturb the stomach they are worse than useless.

"(3) Care should be exercised in the selection of a proper antiseptic; it should be nontoxic and nonirritating.

"(4) Care should be exercised in the selection of the diet, that it be of such a character as not to favor bacterial growth."

PATHOLOGY.

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A REVIEW OF THE YEAR'S WORK ON PROTOZOA.

THE year just passed has seen much activity directed towards the study of the protozoa and numerous efforts have been made to establish the etiological relationships of a number of real or supposed organisms of this class. While some important advances have resulted from this work it must be said that on the whole there has been in a number of instances an unfortunate disposition manifested to jump at far-reaching conclusions and to regard as etiological factors certain bodies the real nature of which has not yet been determined. Even within the year some of these claims have been attacked and shown to have little or no foundation.

CANCER.—Not a single article appeared during the year that in any way may be regarded as giving strong support to the claims which have been made by a number of writers concerning protozoa as the cause of cancer. No absolute proof has yet been offered that the peculiar inclusions seen in cancer-cells are parasites of any kind, and no new evidence has been offered as to their protozoan nature. While Plimmer and a few others have reiterated their belief in the parasitic nature of these bodies the literature of the year has on the other hand been marked by a tendency to return to other theories—notably Cohnheim's—in seeking an explanation of the cause of cancer. The opinion has been freely expressed that much work remains to be done along other lines of cancer-research than along that of parasitology. With our present technical methods we seem to be brought to a standstill in so far as our study of cancer-cell inclusions is concerned.

LEUKÆMIA.—Löwit (*Beiträge zur pathologische Anatomie,* 1903) reports further observations upon the appearances regarded by him as protozoa and the cause of the leukæmia (*Hæmamœba leukæmiæ magna, Hæmamœba leukæmiæ intranuclearis*). He asserts that he has found sporulation forms of the hæmamœba magna in the blood-forming organs in myelæmia. He also claims to have inoculated rabbits with this form of leukæmia and in such rabbits to find both amœbic and flagellate forms of the parasite. He thinks that in the human body reproduction takes place by sporulation while outside it occurs by sexual conjugation, the flagella having a sexual function. In other articles (*Centralblatt für Pathologie,* 1903) he gives directions for staining the amœbæ. Two methods of differentiation are given by which the parasites may be distinguished from mast-cells. In spite of the severe attacks upon his views Löwit seems more firmly entrenched in his belief that he is dealing with the cause of myelæmic leukæmia. Nevertheless no one else of authority has accepted his discovery, and the majority of writers believe with Turck that the bodies are artefacts.

YELLOW FEVER.—In July last the "Reports of Working Party Number I of the United States Yellow Fever Institute" was published (Parker, Beyer and Pothier). These observers confirmed some of the work of Reed and Carroll respecting the theory of the transmission of the disease by mosquitoes, and described a supposed protozoan parasite found in Stegomiæ that had bitten patients affected with yellow fever. To this organism they have given the name of *Myxococcidium stegomyiæ*. Five stages of development were described. Of these stages the forms interpreted as fusiform protozoa were the only ones found to be present constantly. The supposed parasite was not found under any other conditions. The writers hold the opinion that the asexual cycle is passed somewhere within the human body, possibly within the blood-plates. Carroll (*Journal of the American Medical Association,* November, 1903) holds that the fusiform stage of the so-called *Myxococcidium stegomyiæ* is not connected in any way with the transmission of yellow fever, and is not a protozoan parasite but a yeast fungus which is found with considerable regularity in both male and female mosquitoes fed on over-ripe banana to which a pure culture of wild yeast had been added, but has not been found hitherto in repeated examinations of Stegomyiæ that have bitten yellow fever patients in the early stages of the disease, when such insects had been fed only on blood, dry sugar and water, even when known to have reproduced the disease in human beings.

MALARIA.—But little has been added during the year to our knowledge of malarial plasmodia. Craig (*American Medicine,* 1903) has studied the autopsy appearances in seven cases of latent malarial infections. The findings were practically the same in both tertian and æstivo-autumnal forms. The spleen was larger and darker than normal but presented no other changes visible to the naked eye. Plasmodia were present in moderate numbers. He concludes that all the stages of the asexual cycle of the plasmodium can be passed in the spleen.

SMALLPOX.—Councilman, Magrath and Brinckerhoff (*Journal of Medical Research,* 1903) reports the finding in the cells of the epidermis of cases of variola of small bodies, which they regard as living organisms. In the lower layers of the epidermis before there is any anatomical evidence of vesicle formation there are found small structureless bodies from one to four microns in diamater. These bodies lie in vacuoles in the cells, the latter presenting at this time little or no evidence of degeneration. They increase in size and give evidence of structure in the form of granules more distinctly stained and lying in definite spaces. Segmentation finally takes place. At the period of segmentation small round or oval ring-like bodies appear in the nucleus of the cell. These increase in size and acquire a definite structure, consisting of a series of vacuoles around a large central vacuole, the rim of the latter staining more distinctly than do other parts of the body. As the bodies become larger the nuclear rim becomes less distinct, and finally disappears, the bodies coming finally to lie in completely degenerated cells, or these may break down freeing the bodies. As the intranuclear body develops the vacuolar structure becomes less evident until a structure is formed which contains numerous fine vacuoles. Small circular bodies then appear in it and groups of these are surrounded by a faint ring which is thought to represent the remains of the body in which they were formed. The circular ring-like bodies have a central dot. The writers regard the intranuclear body as a further stage of development of the intracellular body and as representing a second complete cycle of development, arising from the spore-like bodies formed by the segmentation of the intracellular body, which pass into the nucleus. These spores they regard as the true infecting material of variola. The intranuclear forms have not been found in vaccinia. In monkeys inoculated with the contents of variola pustules the intracellular and intranuclear cycles were found occurring in the same sequence as in man. The writers conclude from this that in smallpox the complete development of the parasite through two cycles takes place and that in vaccinia the primary cycle only. These observations have not yet been confirmed, and the fuller report promised by the authors has not yet appeared.

SCARLET FEVER.—Mallory (*Journal of Medical Research,* 1904) reports the finding in four cases of scarlet fever of protozoon-like bodies in the protoplasm of the epithelial cells of the epidermis, between these cells, and free in the lymph vessels and spaces of the corium. The tissue was fixed in Zenker's fluid and stained with eosin and methylene blue. Two groups of bodies were found, one consisting of round, oval, elongated and lobulated bodies stained delicately but sharply with the methylene blue. The second group is characterized by a radiate structure. They vary from four to six microns in diameter, are usually spherical but occasionally somewhat elongated. They contain a central round body around which are grouped in optical section from ten to eighteen narrow segments which in some cases are united but in others are sharply separated laterally from each other. The segments are sometimes free. The central body of the rosettes is at first large and stains a deep blue, but as the segments enlarge and become free it contracts and undergoes some change in consequence of which it stains intensely with eosin. In other cases of scarlet fever, both early and late stages, no bodies were found. Mallory regards the different forms found as representing a cycle of asexual development (schizogony) analogous to that of the malarial parasite. He proposes the name *Cyclaster scarlatinalis.* While personally believing that these bodies are protozoa and have an etiological relation to scarlet fever he does not claim that such a relation has been proved.

TROPICAL ULCER.—Wright (*Journal of Medical Research,* December, 1903) found in the excised lesion of a case of "Delhi boil" numerous bodies, round, sharply defined, and two to four microns in diameter, and of such a nature as to justify the belief that they are probably protozoa. Their small size, their great number, intracellular position and their morphology suggest that they are microsporidia. Nothing was observed that would suggest a reproductive cycle. The bodies were present in large numbers in the smears. Wright suggests the name *Helcosoma tropicum.*

TRYPANOSOMIASIS.—Cases of infection of the human body with trypanosoma have been reported during the last year by Dutton, Manson, Castellani and others, as showing an etiological relation between these organisms and certain forms of intermittent fever and the sleeping sickness. As the parasite described as the cause of intermittent fever does not seem identical with that described as the cause of sleeping sickness it seems probable that more than one trypanosome may be pathogenic for man. Sherwood and Evans have reported cases of intermittent fever following the bite of the common wild rat. The latter believes that such cases are most probably due to trypanosome infection. The great interest shown in trypanosomes, and the fact that two species have been artificially cultivated may lead us to expect important results in this line of research in the near future.

EDITORIAL COMMENT.

ETHICAL DELUSIONS MEDICAL.

RYLAND, in the introductory chapter of his manual on "Ethics," accurately estimates the critical nature of humanity when he remarks that "We are constantly passing judgments on the actions of ourselves and of others. We describe some as good, some as bad, and others again, perhaps, as indifferent." In view of this ingenuous rendering the necessity of apologizing for the censorious tone that pervades succeeding comments is obviated. Likewise the function of eulogizing individuals for pursuing the course of the just is deemed inessential on the ground that bounty should not be offered for righteousness. As this is the month that custom has especially dedicated to passing judgments, adopting resolutions, striking balances, and electing diaries, the time seems propitious for contemplating the equity of the biblical injunction which commands that "Whatsoever ye would that men should do unto you, do ye even so to them."

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The first code was framed for Adam and Eve and obtained in the Garden of Eden for an indefinite period, but eventually Eve proved recreant to the fidelity imposed, and ethical weakness has been transmitted across the centuries as a heritage of the original transgression. Some individuals prostitute ethics intentionally, while others perpetrate like offense delusionally. Assignment of words or deeds to either category is accorded to personal option. Nevertheless the effect of unethical example is identical in either case and wields a powerful influence in shaping the professional conduct of a certain element in the medical guild, conduct, as well as character, being partly inherited and partly acquired. However, the accused is considered innocent in law until proven guilty, and like consideration should be accorded in medicine, as certain oblique tendencies may be delusional rather than intentional.

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The theory of ethics is easily stated, but the practice of ethics depends upon the personal equasion. The general practician who inveigles himself into the belief that he is pursuing the healing art in accordance with the golden maxim by resorting to such procedures as sending to the druggist for a copy of the prescription of a brother physician, and then endeavoring to create distrust in a stolen patient by declaring that the former medical attendant has been poisoning the system with twenty-grain doses of potassium iodid, possibly depends upon the mantle of charity to shield him from the epithet of deceiver, but one so devoid of reason as to believe this screen entirely opaque is undoubtedly harboring delusion.

* * *

The emergency physician either purposely or otherwise sometimes manifests faulty ethical judgment. When hurriedly called to a patient during the absence or illness of the regular medical attendant the province of the exigency doctor is contemplated in rendering professional service exclusively, and neither the first nor succeeding visits should be utilized to imperil the standing of the practician in control of the case. Instances are reported wherein various emergency attendants have been industrious in the matter of displacing confidence in some worthy confrere by expression of countenance or disparaging remark when informed of the former management of a case, and have even inaugurated schemes to destroy the faith reposed in the family doctor. The physician who thinks such despicable practice can be reconciled with ethical medical conduct is evidently a victim of delusion.

* * *

The insurance physician is often overzealous in his efforts to serve the corporation he represents. The practices of this official are sometimes inspired by jealousy rather than by justice. In the event of an insured person encountering an accident the examiner frequently obtrudes his presence on the regular physician and occasionally endeavors to supplant him in the management of the case. Indeed instances are known wherein this official has even pursued the unnerved patient to the hospital and connived to undermine the attending doctor by insinuations calculated to create distrust in one fully qualified to deal with the exigencies of the situation. The golden rule does not contemplate procedures of this nature. The insurance company does not engage a physician to play this contemptible role, and if such were the case no medical gentleman would think of debasing professional dignity by assuming the villanous character. The doctor who thinks this a legitimate way to build a practice is certainly a prey to delusion.

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The editor-physician might feel slighted if not accorded consideration in this salmagundi. There are tricks in all trades but ours, and occasionally trickery finds its way to the domicile of the tripod. Positive information has escaped censor that an otherwise excellent journal has for years been dispensing "medical" news prepared by a "lay" concern in the east. It had often occurred to us that said news bore the earmarks of unreliable newspaper clippings and now it transpires that the items are supplied by a clipping bureau. In some sanctums the idea seems to prevail that anybody can write medical news, just as anybody can write "reading notices," "clinical reports," et cetera, that insult the doctor by appearance in the text of many medical journals *a la* newspaper-quack-medicine fashion. Other editors seem to have developed a species of literary piracy. Unable to obtain sufficient original material they seize the contents of contemporaries, abstract and publish the papers in their original department, without the courtesy of credit, and thereby endeavor to create the impression that a large corps of writers seeks an audience with the profession through their pages. These shallow feats certainly suggest foundation in delusion.

* * *

Confreres and contemporaries alike should remember that, to paraphrase a well-known aphorism, "You can fool some of the doctors all the time, and all the doctors some of the time, but you cannot fool all the doctors all the time," and the person who thinks this possible is certainly a subject of delusion.

MEDICAL NEWS.

EXTINCTION OF THE BLACK RACE.

DOCTOR JACOB W. HILL, of South Bend, Indiana, a graduate of Jefferson Medical College in 1881, is credited in the public prints with announcing a scheme to transform the negroes into a white race. The theory advanced by the doctor is that the skin of the negro is more sensitive than that of any other human being, and consequently a greater amount of pigment reaches the surface, a provision of nature against the climatic conditions of the place of his nativity. The race continues dark in the countries further north by reason of reversion to the primitive type, and the doctor thinks the red light affords a means of converting black babies into white men and women. It is argued that, as many children of colored people are born white, the darker hue not being assumed until they are exposed to light, when the shading becomes more and more accentuated, the color of their forefathers might be obviated by the application of artificial light filtered through red globes. A wealthy manufacturer has argeed to supply the necessary money to conduct the experiments in a local hospital, a room being set apart for the purpose and furnished completely in red. The rays of the sun will be excluded. A negro child has been secured, and doctors, nurses, and baby will be attired in red.

MINOR INTELLIGENCE.

Doctor Hamill M. Alexander, of Marietta, Pennsylvania, owner of the Lancaster County Vaccine Farms, which were established in 1889, died recently, aged fifty-two years. He was a graduate of the medical department of the University of Pennsylvania, class of 1876.

Cash prizes amounting to fifteen hundred dollars are offered by the *Illustrated Review of Physiologic Therapeutics*, 19 Sixteenth street east, New York City, for the best essays on the application of "X-Rays in Medicine and Surgery," the first prize being one thousand dollars. Competition is open to all physicians, surgeons and hospital attachés interested in any branch of *x*-ray work. Information concerning title, time allowed, conditions, et cetera, promptly furnished on inquiry.

The oldest living triplets in Michigan reside at Saint Clair. The Cramptons—a brother and two sisters—were born in Fremont, Ohio, fifty-seven years ago. The mother of the trio is also credited with having given birth to two pairs of twins, besides seven other children—a total of fourteen. In 1850 the parents moved to Detroit and a few years afterward located in Saint Clair. The mother of these children lived until 1899, being ninety-four years of age at the time of her demise.

William Matthew Warren, of Detroit, general manager of the pharmaceutic establishment of Parke, Davis & Company, died November 11, 1903, of spinal disease complicated by an affection of the stomach, aged forty years. He was born at Smith's Station, Alabama, and entered the New York office of the above firm as chore boy when sixteen years old. His ability and integrity were soon recognized and his promotions were rapid, the position of purchasing agent for the eastern branch being speedily attained and efficiently filled until 1886, when he was summoned to the Detroit headquarters, where he spent some months in actual work in the laboratories of the plant, and then assumed management of the traveling service, in which capacity he visited every state in the Union. In 1892 he was appointed assistant to George S. Davis, and five years later acceded to the general managership of the concern. He was a widower at the time of his demise, his wife, whom he married in 1893, having died about three years ago. He is survived by a daughter nine years of age.

Doctor Hunter H. Powell reported recently the case of a lad ten years of age who swallowed and successfully passed an open safety pin. This feat has just been surpassed in the practice of Doctor Hiram D. Peterson, whose nine-months'-old child swallowed and passed a society pin. While lying on her mother's lap the babe pulled the pin from her dress, and after some choking and strangling succeeded in transferring it to her stomach. At this juncture the doctor came upon the scene, and in his haste administered an emetic which produced copius vomiting without expelling the pin. He next resorted to stuffing her with bread and slippery elm. The bowels moved daily, and on October 22 at 8 o'clock A. M. the pin was felt in the rectum, having been in the alimentary tract since October 18 at 3 P. M. A glycerine suppository was now inserted and the pin made its exit without further difficulty. The child suffered no bad effects from the time of its ingestion, not even from the unfortunate emetic. The pin is diamond-shaped, three centimeters long, the extreme ends of which are nearly as sharp as the pin itself, which is two and one-half centimeters long and when open forms an angle of one hundred five degrees with the shaft. It is gold, set with twenty-four pearls, and was practically unchanged by the secretions of stomach or bowels. Doctor Monnier recently reported a case of gastrotomy for foreign bodies to the Paris Academy of Medicine. The patient was a man twenty-two years of age, who was suffering from epilepsy and melena, and had sharp pains in the left hypochondrium accompanied by crepitation on pressure. The stomach contained eight teaspoons from eight to fifteen centimeters long, a piece of pronged fork, a letter file twelve centimeters long, two sharp points seven and fourteen centimeters long respectively, a needle six centimeters long, a knife blade five centimeters long, a piece of comb, and a key four centimeters long, the aggregate weight of which was two hundred thirty grams. No ulcerative lesions of the stomach were found.

RECENT LITERATURE.

REVIEWS.

DISEASES OF THE PANCREAS AND THEIR SURGICAL TREATMENT.*

The last four or five years have seen an enormous increase in interest accorded to the pancreas and its diseases. The valuable results of pathological study and investigation have stimulated surgeons and medical men to increased activity along operative and clinical lines, and as a consequence a number of books relating to the pancreas and its pathology have recently appeared. The present volume is one of the first in this field. Its dedication reads "To the Surgeons of America in Cordial Recognition of Their Work." The first chapter deals with the anatomy of the pancreas and the methods of obtaining access to the organ for the purpose of operation. In the second there is a résumé of the recent experimental work, particularly that relating to diabetes. Injuries of the organ are discussed in the third chapter, while the next four are given up to pancreatitis—acute pancreatitis, subacute pancreatitis, and chronic pancreatitis. In the three remaining chapters pancreatic calculus, cysts and new-growths are treated. The book gives the impression of having been very hastily put together, and consists largely of cases cited from the literature. Why some cases should be chosen and others more important should be omitted is not clear. The book is well printed but the illustrations are very few. No attempt has been made to give a complete bibliography, and this omission must be regarded as a very serious defect in a work of this kind. It seems a pity that more time and effort were not taken to make the book more complete.

*By A. W. Mayo Robson, F. R. C. S., Senior Surgeon, Leeds General Infirmary; Emeritus Professor of Surgery, Yorkshire College, Victoria University, England; and B. G. A. Moynohan, M. S. (London), F. R. C. S., Assistant Surgeon, Leeds General Infirmary; Consulting Surgeon to the Skipton and to the Mirfield Memorial Hospitals, England. Handsome octavo volume of 293 pages, illustrated. Philadelphia and London: W. B. Saunders & Company, 1902. Cloth, $3.00, net.

PRACTICE OF OBSTETRICS.*

Doctor Edgar has given us in his "Practice of Obstetrics" the results of fifteen years' work in maternity, bedside and didactic teaching. The mere fact that a man has had this experience, even in his own chosen field, does not by any means qualify him for the task of writing a really good text-book. The excellent volume before us bears testimony to the fact that the author has used his time well and to a purpose. The text is not a mere rehash of what has been dealt out to us *ad nauseam;* rather its pages abound with the author's own views on each special subject—opinions which should and do have weight because they are based on an unusual experience in hospital and private practice. Exhaustive as is the work, one cannot see which of the one thousand one hundred pages could be dispensed with. The classification is simple, yet complete. The illustrations are voluminous and exteremely practical. The series illustrating normal and abnormal labor are especially good. On the whole, the book is one of which its author justly may be proud. It is a volume which every practitioner should have on his shelves, or better still, on his study table, where he can turn to it for real help, in the complications which so frequently arise in obstetrical practice.

*By J. Clifton Edgar, New York. Published by P. Blakiston's Sons & Company, Philadelphia, 1903.

A TEXT-BOOK OF THE DISEASES OF WOMEN.*

THE fact that the book before us has reached a fourth edition in such a comparatively short time is abundant proof that its merits are appreciated. Does not the secret of its success lie in the fact that Doctor Penrose has not attempted too much? He has not written his book for the practitioner and medical student, but for the latter alone. He has omitted much that is usually included in a gynecological text-book, such as anatomy and physiology, but he has more than made up for such omissions by his descriptions of the more essential aspects of his subject. The book is delightfully written and is well, but not too copiously, illustrated. As a text-book, it cannot be too highly commended.

*By Charles B. Penrose, M. D., Ph. D. Published by W. B. Saunders & Company, Philadelphia and London.

THE A B C OF PHOTOMICROGRAPHY.*

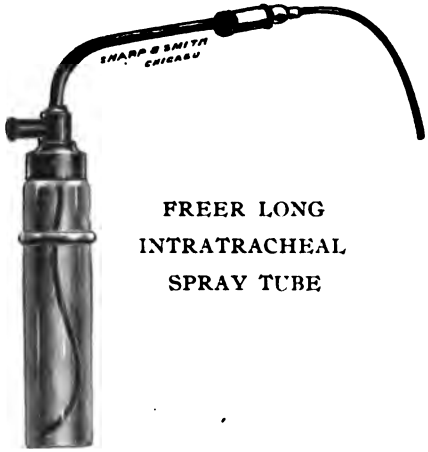
INASMUCH as there is practically no book published dealing with the first principles of photomicrography this little book will be welcomed by all who wish to do something for themselves in this line. It is intended especially for the beginner and deals with the little things to be done or left undone, a knowledge of which is essential to success but which are entirely neglected in the more elaborate works on this subject. The directions given are very clear, and are the result of a large personal experience. The book, therefore, can hardly help being useful to those undertaking photomicrography.

*A Practical Handbook for Beginners. By W. H. Walmsley. 155 pages, 5x7, with 29 photomicrographs by the author. Cloth, $1.25, net. Tennant & Ward, New York.

THE DEVELOPMENT OF THE HUMAN BODY.*

THE volume presents a convenient summing-up of our knowledge regarding the development of the human body. Though styled a manual it does not possess the superficial character of books so called. It is in reality a shorter text-book and retains the scientific character of such. It cannot fail to be of value both to students and to those practitioners who wish to keep in mind the wonderful and fascinating story of the development of the body. The book is well printed, and the illustrations are many and well chosen. A few errors have been noted, the most important of which is the numbering of the cerebral vesicles in a reversed order to that which is usually followed.

*A Manual of Human Embryology. By J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy in the University of Michigan. With 270 illustrations. 527 pages. Philadelphia: P. Blakiston's Son & Company. Price $3.50.



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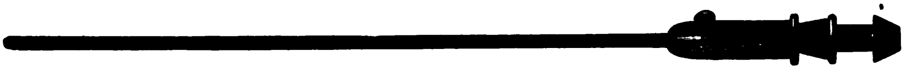

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ORIGINAL ARTICLES.

MEMOIRS.

CHRONIC RHINITIS, ITS VARIETIES AND TREATMENT.*

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IT is my intention to relate chiefly my own experience in this paper, as a detailed review of this extensive subject would exceed the limits of a single article.

The pathologic states grouped under the title, chronic rhinitis, vary so greatly that they scarcely seem to belong to the same disease process and some of the conditions are certainly rather vascular neuroses than inflammatory in nature. To this latter class belongs the condition called intumescent rhinitis, the commonest form in which the chronic rhinitis shows itself. In this variety of the affection often the only evidence that the nasal mucosa is not in a normal condition is the presence of more or less transitory vascular swellings of the mucous membrane confined almost entirely to the inferior turbinated bodies. The cause of the condition is a relaxation of the muscular coats of the large lacunar veins of the spongy stroma of the mucous membrane of the inferior turbinated bodies and a paretic state of the unstriped muscular fibers found in their intervascular elastic and connective tissue, the swollen turbinal in these cases being merely a soft trabeculated blood sac. These hyperemic swellings may exist without any distinct catarrhal inflammation of the mucosa or more or less of this and excessive secretion may coexist.

Characteristic of these intumescences of the lower turbinals is their rapid coming and going, swelling and deturgescence often following each other under the eyes of the observer. Both nostrils are not usually obstructed by the distended turbinals at the same time but the swelling shifts from one to the other. Though the tumefaction is mainly confined to the lower turbinals, the mucosa of the septum, middle turbinals and other parts of the nasal interior often participates in a less degree but sufficiently, combined with the swelling of the lower turbinal, to make the obstruction of a nostril temporarily absolute. The intumescence is most apt to occur at night and as inspection in the daytime may show a normal nasal interior, the diagnosis often has to be made from the symptoms. In most cases the anterior ends of one or both lower turbinals on inspection appear as smooth red or pale bodies into which a probe sinks as into an air cushion. Posterior rhinoscopy may show normal conditions or more or less swelling of the posterior ends of the lower turbinals, which, when large, may be seen as globular, whitish or pink swellings, usually of an irregular, blackberry-like surface, their faculty for retraction and disappearance being the only thing that distinguishes their aspect from that of some true hypertrophies. This shrinkage I have seen occur spontaneously during inspection and it almost invariably results from applications of cocain. The vascular intumescence of the lower turbinals is merely an exaggeration of their physiologic distention and contraction in smaller limits. It often forms an idiopathic disorder as described, unassociated with catarrhal changes, but also is a symptom of most nasal irritations and inflammatory conditions, so that it is seen in acute colds in the head, or in the catarrhal forms of chronic rhinitis with excess of secretion or where there exists continued nasal irritation because of dry and dusty air or purulent discharges from the sinuses. Anything favoring venous stagnation such as lack of exercise, a stooping position, or excessive rarefaction of the air in one nostril during inspiration, because of obstruction of the other, as by a deflection, may create intumescence. The venous stasis of intumescent rhinitis after long continuance may lead to some true hyperplasia of the turbinals but seldom to a marked degree. A step beyond simple intumescence is the catarrhal form of chronic rhinitis, also called simple chronic rhinitis. It is usually associated, as stated, with varying degrees of intumescence and in the usual form seen in adults is not so much a continuous condition as a succession of prolonged colds in the head, following each other closely, with varying degrees of freedom from the symptoms in the interval, the condition in this respect resembling the exacerbations of chronic bronchitis and their subsidence, the pathologically altered mucosa always offering a diminished resistance to causes of inflammation. The main feature in simple chronic rhinitis is disturbance of secretion which at the beginning of the exacerbations is scanty and watery, later mucopurulent and in their end stages dry and adherent. The secretion, except at the height of the periods of exacerbation, is seldom excessive and the condition called nasal hydrorrhea and rhinorrhea in which there may be an enormous amount of watery flow is characteristic rather of vasomotor disturbances than of true catarrhal inflammation. The nasal mucosa in simple chronic rhinitis may show diffuse moderate thickening or it may be of normal thinness. Its color varies from pale, to red during acute congestions. Local swellings of the intumescent variety described are often present. During the exacerbations watery or mucopurulent

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*Read by invitation before the ANN ARBOR MEDICAL CLUB.

APR 1906

secretion may be seen in the nasal passages, usually upon the nasal floor or between the turbinals. It is always more mucous than purulent, a condition distinguishing it from the discharge of suppurating sinuses which is generally pure pus and found almost always in the middle meatus or olfactory region between the middle turbinal and septum in one nostril, while the secretion of chronic rhinitis is irregularly located in both nostrils.

The watery nasal discharges of reflex origin mentioned, occur especially in neurotic persons in whom slight causes, that in a normal individual would create little or no local reaction, lead to free nasal secretion analogous to lachrymation in an irritated eye. The healthy nasal mucosa naturally responds to irritants by an exudation of watery mucus intended to wash them away if solid or dilute them if chemical, but if the mucous membrane be abnormally sensitive an excess of exudation will take place even if the irritant be too insignificant to affect a healthy nose. Thus chronic rhinitis, nasal mucous polypi or deflections creating pressure may lead to free discharges of reflex and not inflammatory origin. The watery secretion seldom flows constantly but usually intermittently in response to inhaled irritants such as dusty dry, or cold air, or to the irritation of intranasal pressure due to vascular turgescence of the mucosa or else the discharge may come on spontaneously after the reflex habit is established. This variety of rhinitis is called coryza vasomotoria, or if it be due to the cause of hay fever, coryza periodica. Its description belongs properly to acute rather than to chronic rhinitis but its symptoms enter into the course of chronic rhinitis in many cases and need to be mentioned with it. Other reflex symptoms besides watery secretion are also found in chronic rhinitis, such as headaches, asthenopia, aprosexia, sneezing fits and lachrymation. These are too well-known to need more than mere mention.

A distinct type of simple chronic rhinitis is the purulent rhinitis of childhood. Children with this affection are familiar objects, with a watery, mucopurulent or rarely a purulent discharge from the nares. These patients nearly all have adenoid vegetations, are mouth-breathers, are often deaf, and the adenoids are usually the cause of the rhinitis though the etiologic order may be reversed. The purulent chronic rhinitis of childhood rarely leads to hypertrophy of the nasal mucosa but more often to atrophy of its stroma in the course of years, and it is probably the chief predisposing cause of the affection called atrophic rhinitis which appears at about the time of puberty. The discharge in the purulent rhinitis of children is seldom continuously purulent but appears in the form of persistent colds with a secretion which is usually mucopurulent in character but in which pus predominates during exacerbations. Many cases of this form of rhinitis in childhood date from scarlatina, diphtheria or measles.

The hypertrophic form of chronic rhinitis is often described as the final outcome of the simple chronic catarrhal variety. It is so in many instances but often there is merely a history of gradually increasing nasal obstruction without a preceding catarrhal condition, just as many tonsils become hypertrophied without a history of preceding attacks of tonsillitis. The mucous membrane of the nose does not thicken evenly as a rule but the hyperplastic changes are generally most pronounced upon the lower turbinated bodies. The middle turbinals and septum also often show localized hypertrophy. On the lower turbinals the anterior and posterior ends are most often enlarged. The anterior portions unlike the smooth reddish swellings of intumescence, are commonly pale, whitish pink or bluish and have an irregular lobulated appearance. The swelling may be moved up and down with a probe but is tough and will not permit the latter to sink into it readily, as is the case in intumescence. Cocain causes but little shrinkage. Hypertrophied middle turbinals from in front usually appear as pale, translucent polypoid, nodular swellings quite different in look from the more opaque tissue of the hypertrophied lower turbinals. Posteriorly the lower turbinals in hypertrophic rhinitis are seen as globular or irregular, bluish-pink or whitish masses, often papillomatous in appearance, which, if large, may fill a whole choana and project out into the nasopharynx. When of moderate size and globular they do not differ in appearance from the swellings of simple intumescence but do not shrink away completely under cocain like the latter. The posterior end of the middle turbinal, if hypertrophied, shows as a glassy, nodular body resembling the tissue of a nasal mucous polyp and usually completely fills the middle and superior meatuses. Its color is commonly a characteristic transparent white. If the posterior portion of the septum be hypertrophied the hyperplastic mucosa projects from it on either side as two white swellings while its posterior border appears as a slender column between them. Anteriorly the portion of the mucosa of the septum opposite the anterior end of the middle turbinal is the usual site of hypertrophy. In one case I found the entire mucous membrane of the septum thickened to a depth of three-sixteenths of an inch. Hypertrophic rhinitis so rarely ends in the atrophic form that the occurrence is a curiosity. In a number of cases the hypertrophy affects the turbinated bones rather than the mucosa, causing bony obstruction to breathing.

The last type of chronic rhinitis to be considered is the atrophic form which has so little in common with the other varieties that it really forms a separate affection. It seldom develops in adults but is probably usually the result of the purulent catarrhs of childhood. The evil effects of the atrophy of the structures of the nasal interior first become noticeable at or near puberty and it is at this age and in the third decade that most of the patients are seen. Skulls with wide, roomy nasal passages have been shown to predispose to atrophic rhinitis and Siebenmann explains on this ground the fact that most of the patients are girls, as the proportionately broad face of women includes the possession of wide nares while the nasal cavities of men are usually higher and narrower in relation to their breadth, in accord with the greater height of their faces. The atrophy in atrophic rhinitis seems to affect the turbinated bones and deeper stroma of the mucosa more than it does the superficial parts of the mucous membrane, which, when cleansed of secretion, usually look quite normal in color and general appearance. The shrinkage of the turbinated bones and vascular stroma of the mucosa makes the nasal fossæ excessively roomy and through them a large part of the posterior pharyngeal wall and the motions of the levatores palati muscles may be seen. The turbinals may dwindle to mere ledges, so that often the hiatus semilunaris and openings of the sinuses under the middle turbinal become abnormally accessible. The atrophy also involves the fibers of the olfactory nerves, usually leading to a diminished or lost sense of smell. In a number of cases presenting even marked atrophy of the structures of the nasal interior, the mucous surface appears pink, clean and healthy at all times and the patient is not aware of his abnormality, as it causes no symptoms. In the majority of instances, however, the condition known as atrophic rhinitis is present, the chief symptom of which is the well-known lining of the nasal interior with crusts, or soft sticky masses of secretion. In aggravated cases no mucosa is visible, the entire nose being tapestried with dry scabs. The crusting rarely confines itself to the nares but appears also in the nasopharynx and often invades the larynx and even the trachea, so that the vocal cords, ventricular bands and interior of the trachea may be seen coated with greenish-black, sticky or dried secretion. After removal of the crusts from the nose the mucosa looks pale-pink and normal in appearance though usually thin and closely applied to the subjacent bone. The crusts may be odorless, rhinitis atrophicans non fetida, or have a characteristic stench, in which case the affection is called rhinitis atrophicans fetida or ozena.

Certain conditions predispose to the occurrence of atrophic rhinitis; abnormally roomy nares as mentioned; dryness of the inspired air, and metaplasia of the ciliated epithelium of the nasal mucosa into cuboid or squamous epithelium. Though rhinitis atrophicans is not found without this change in the epithelial lining, the nasal interior may remain healthy even if squamous be substituted for ciliated epithelium. Dryness and fetor of the secretions may exist without atrophy of the nasal structures, a condition called rhinitis sicca. The reason for the occurrence of rhinitis atrophicans is still undetermined. Gruenwald's assertion that the disease is always due to suppuration in the accessory sinuses is denied by the majority and it has been shown by[1] A. Alexander that suppuration of the sinuses is rather to be regarded as a consequence of atrophic rhinitis than its cause, especially as the latter has its origin in childhood when empyema of the sinuses is almost unknown. The bacillus mucosus capsulatus of Abel may be chief source of the fetor but is not at present regarded as the exciting cause of the disease, the etiology of which is still obscure.

In describing the treatment of chronic rhinitis I shall confine myself for the sake of brevity to the methods I have found most useful.

[1] Arthur Alexander: *Fraenkel's Archiv fur Larynologie u. Rhinologie*, 1903, page 1.

For the relief of the vasomotor disturbances of chronic rhinitis, vascular intumescence and hydrorrhea, general treatment is of great importance. Most useful among measures of this kind is calisthenics, as quick active exercises with deep breathing through the nose relieve the veins of the body of blood stagnating in them and so deplete and shrink the intumescent turbinals. Patients may do these exercises in their rooms without any apparatus. Faulty positions, such as bending over desks, that favor venous stasis in the branches of the jugulars should be corrected. Intumescent rhinitis is also improved by cold showers, which stimulate contraction of the turbinals as well as of the vessels and muscles of the skin. Dryness of the air in heated houses is often great and aggravates intumescent rhinitis. This condition may be mitigated by having a number of cloths or sheets of filter paper hung on wires with their lower edges in a vessel of water, which they draw up for evaporation, the surface thus created for this purpose being very great. On a larger scale a series of towels hung on a towel-rack over a washtub of water with their edges hanging in it will vaporize several quarts of water in a day. Open pans of water furnish too little moisture to be of much use unless they be kept boiling.

Local sources of reflex irritation should be removed. As an instance, in an aggravated case of coryza vasomotoria of years duration, with lachrymation, loss of mental concentration, intumescence and rhinorrhea, by removing a deflection in the perpendicular plate pressing upon the right middle turbinal, I relieved my patient permanently of his symptoms. Those who work in dusty air should wear respirators or a little tuft of cotton as a dust filter in the nostrils. I have found an excessive growth of hair in the nasal vestibule a decided obstruction to respiration, and one especially found in men. This condition favors intumescence, as all nasal obstructions do, and the hair should be removed with curved scissors. Another useful measure in a dry atmosphere is anointing the nostrils with a minute amount of lanolin to prevent drying of secretion at the nasal orifice. Deflections of the septum or other permanent obstructions to nasal respiration in one naris nearly always lead to intumescence or hypertrophy of the mucosa of the inferior turbinal in the other one, on account of the excessive rarefaction of the air produced in the latter during inspiration as all or nearly all of the air current designed for two nostrils has to pass through the one open one, the excessive negative pressure thus produced acting on its mucosa in the manner of a cupping-glass. The removing of deflections and other nasal obstacles should therefore precede the treatment of intumescent or hypertropic rhinitis.

In the milder cases of intumescence, especially those associated with catarrhal discharge, massage of the nasal mucosa by rapid motions of a minute cotton swab dipped in a solution of protargol of thirty grains to the ounce, to combat existing catarrhal conditions, may lead to long continued retraction of the intumescence when combined with the hygienic measures mentioned. The tendency to recurrence of the condition is marked, however, and usually the patient has not time for the tedious massage method. Under these conditions the galvanocautery is the best treatment for intumescent rhinitis, while it is of little use in true hypertrophy. The object of the cautery is to bind the mucosa to the subjacent lower turbinated bone by a cicatrix after the burn has healed. The electrode I use is shaped like a fiddle bow and has a heavy platinum wire as suggested by Ingals. A thick wire retains the heat while in the tissues and cuts a broad furrow, making a firm scar. The electrode is heated to a bright white heat as, if of a lower temperature, it will not penetrate the tissues and will sear a large surface, causing much inflammatory reaction.

The wire is drawn back and forth to keep it from sticking, and burns along the whole length of the turbinal until it grates on the bone everywhere. There need be no fear of cauterizing the Eustachian prominences if the electrode enters the nasopharynx, as they lie well outside of its path. I have never caused bleeding of more than a few drops except in one case wherein a furious hemorrhage followed cauterization of the posterior part of a lower turbinal, making packing of the naris necessary. Never more than one streak should be burned at one sitting and the operation should not be repeated under four weeks. Reaction is limited to swelling of the turbinated body for a week or two, and after two to four weeks the nostril remains clear. Nares narrowed by deflections of the septum or enlargement of the turbinated bones should not be cauterized as there is danger of adhesions following between the turbinal and septum. The operation indicated in these cases is resection of the deflection or enlarged turbinated bone. To make cauterization permissible there should be at least a space of three-sixteenths of an inch between the lower turbinal and septum. For local anesthesia I apply cocain in powder with a minute moist swab to the parts with which the electrode will come in contact. Those who confuse intumescent with hypertrophic rhinitis wish to discard the cautery entirely for resection of the swollen turbinal. Those who sunder the two states will find the cautery ideal for intumescence but useless for hypertrophies. Cauterizing the middle turbinated bodies I have found unsatisfactory as their enlargements are polypoid hypertrophies and dropsical hyperplasias rather than vascular swellings.

Simple chronic rhinitis, with excess of secretion, I treat locally generally with the organic silver salts, such as argyrol or protargol. As a preliminary to their application excess of mucus is removed by washing the nares and nasopharynx with a normal salt solution by means of a straight, hard rubber Eustachian catheter with three minute holes at one end which throw three tiny but forcible jets which clear away all secretion when the catheter is passed back and forth and rotated in the nostril and nasopharynx. The small amount of fluid emitted precludes any danger to the middle ear. After cleansing away secretion the protargol is applied with a swab to the nasal mucous membrane in a strength of from thirty to fifty grains to the ounce, the swab following every cranny in the nasal fossa. This mode of application is preferable to a spray as the latter does not rub in the remedy and cannot enter spaces closed by soft swelling. The posterior nares, however, are reached from behind the velum palati with a spray. The older metallic astringents such as the copper and zinc salts or alum are too irritating to be used in effective strength on the nasal mucosa and if used continuously endanger the sense of smell.

True hypertrophies of the nasal mucosa or turbinated bones require removal by cutting methods. Localized outgrowths are well suited for the cold snare. To reach the hyperplastic posterior ends of the lower turbinals with it, the loop of number five or seven steel piano wire is passed through the nostril into the nasophrynx and drawn forward until felt to lightly catch on the turbinated body, when the snare tube is firmly crowded against the outer wall of the nose, the snare constricted and made to slowly cut through the mass to avoid bleeding. It is best to have five-minute intervals of rest between the tightenings of the snare by the milled nut used for this purpose and to make only a few turns at one time, so that the whole operation takes at least one-half hour, as this slow method, suggested by Franz Bruck, is the best preventive of the delayed primary hemorrhage apt to come on an hour or two after these operations, and which, though seldom severe, alarms the patient. A valuable suggestion for the prevention of bleeding is also that of Doctor John Barnhill, of Indianapolis, who applies a solution of perchlorid of iron immediately after the operation to the wound before there is any bleeding. After this has once set in the iron is of no value and fills the nose with tough clots which decompose. Packing the naris is of little use in these cases as the wound is really in the nasopharynx. In a case of dangerous bleeding posterior plugging may be resorted to but a better method than this is the forcing up into the nasopharynx of a sponge which fills it entirely, while the bleeding nostril is packed from in front. A string should be attached to the sponge for its withdrawal. After cutting off the hypertrophied posterior end of the lower turbinal with the snare the detatched mass is often hard to find in the naris and remove. It is better to let it lie than to disturb the wound by too great efforts to get at it, as these favor hemorrhage by opening the vessels. Forceps for the same reason should not be used, but an attempt may be made to bring the piece forward with a hooked probe. Anterior soft hypertrophies may also be snared but usually may be more accurately removed with Gruenwald's or other good nasal scissors.

Hypertrophy of the lower and at times of the middle turbinal is often bony. Bony enlargements of the lower turbinated body approach the septum closely or touch it, greatly interfering with nasal respiration. For removal of these bony obstructions I formerly used the saw exclusively but of late have been so successful with strong spokeshaves which I have had bent on their shanks on the flat at an angle of forty-five degrees, that I much prefer them when they may be applied. The angle is necessary in order that the spokeshave may fit over the posterior end of the turbinated body, as a straight spokeshave will not take hold. Three sizes are needed and the largest one that may be insinuated through the nostril is the one to use. A first cut with a small spokeshave will often clear the naris enough to permit a larger one to pass through it and take off a piece of sufficient size. The spokeshave planes off the obstructing bone with a clean cut at one or two pulls leaving the nostril free and removing as much as is needed, without reducing the size of the turbinated body too much. Straight or bent spokeshaves may also be used for shaving off soft hypertrophies along the lower border of the lower and middle turbinated bodies. As good an operation may be done with the saw but it is more tedious and painful. After ablation of the bony obstruction nasal scissors are useful to trim off the soft parts or the punch forceps of Gruenwald may be employed.

Turbinotomy of the middle turbinated bodies is best done with nasal scissors of which there are a good many patterns. Those whose blades open vertically cut off the middle turbinated body close to its attachment and if a less radical removal be desired the turbinal may be resected with scissors that open horizontally. Gruenwald's punch forceps are also exceedingly useful here, and in some cases the spokeshave may also be applied but does not usually fit as well for this region as for the lower turbinal. Resection of the middle turbinal in hypertrophic rhinitis is seldom needed. For the local anesthesia in these operations I apply cocain as for the cautery. In addition adrenalin, one to one thousand, will make the operation bloodless in many cases.

After turbinotomy the naris should always be packed, for without this precaution dangerous delayed hemorrhage is quite sure to occur when the effect of cocain and adrenalin are gone and the immediate bleeding is sometimes severe in spite of them. For the tampon I use a long strip of lint one-half of an inch wide, as recommended by Ingals. I render it aseptic by rubbing powdered subnitrate of bismuth into it. A thread is tied to the end first pushed in so that the latter may be pulled forward after the packing is in place as it is apt in time to get loose and drop down into the throat, creating retching. To pack firmly it is well to pass the index finger into the nasopharynx and to place it in the posterior naris so that the lint may be pushed with a probe or smooth forceps against its support. The packing should not be all removed before the fourth to sixth day though portions that become loose may be cut off from time to time before this. In dislodging the tampon the lint strip should be twisted spirally with a forceps when it will be observed to loosen from the bone. A direct pull, if the packing catch, is apt to create bleeding.

The purulent rhinitis of childhood is usually due to hypertrophy of the pharyngeal and faucial tonsils and removal of these respiratory obstructions will promtply end it, while palliative treatment as long as they exist is of no permanent use. The eczema of the nostrils and upper lip so often present in chronic rhinitis in childhood yields promptly to an application of lanolin three parts, vaselin one part, salicylic acid two per cent, to the affected parts and interior of the nostrils. The crusting about the exterior nares disappears and the nasal discharge is also favorably influenced, much of it often being reflex from the soreness of the eczematous regions. The thinner oils such as oil vaselin or albolene I have found of little use in nasal affections as they are not thick enough to adhere long to the cutaneous or mucous surfaces of the nasal cavity. The ointment in the course of time spreads under the influence of the body heat and covers the surface of the nasal vestibule and mucosa back of it. Cleansing sprays and irrigations are usually resisted by children but dropping into the nostrils of a normal salt solution from a medicine dropper or inhalations from a steam atomizer are usually tolerated for softening of secretions. When these are thus liquefied the child may be taught to blow them away, if it be old enough, when the treatment may be completed by dropping or if possible swabbing a protargol solution into the nares. Syringing the nares, even if a child will tolerate it, is dangerous to the middle ear.

Atrophy of the structures of the nasal interior is irremediable but as long as it is not associated with abnormal changes in the nasal secretions does not inconvenience the patient. Cases with simple atrophy, therefore, need no treatment. To remove the adherent masses of dried pus and mucus in atrophic rhinitis the hard rubber irrigating tube mentioned is efficient when the scabs are not too hard or firmly adherent, patients learning readily to manipulate the tube and by means of a bulb syringe to wash the nose and nasophrynx clean in a few minutes. In some cases the crusts are so firmly attached that they may not be removed unless softened. For this purpose Gottstein's plugs are efficient. A square piece of cotton about three inches long is neatly rolled into a cylinder between the fingers by means of an applicator around one end of which one inch of the cotton square is twisted, to lightly hold it. Then the applicator is pulled out, the cotton roll dipped into the ointment mentioned and rotated into the nostril as far as it will go. This the patient may readily do with his fingers. The plug should be large enough to snugly fill the nostril. The screw recommended by Gottstein for introducing the cotton is unnecessary. If retained from a half hour to an hour the cotton, aided by the ointment, will soften the crusts by exciting secretion and preventing its drying in the air current so that the resulting pasty matter may be readily washed away. After removal of the crusts the nose should be irrigated with a solution of potassium permanganate of from one-eighth to one-half grain to the ounce. This disinfectant is not needed to remove fetor, for the latter disappears with the scabs, but is efficient in preventing their formation and stops the return of the odor by rendering the mucosa aseptic. I have also found potassium permanganate in a spray of from four to eight grains to the ounce effective in preventing the reformation of scabs in the laryngeal and tracheal extension of the disease. For this purpose I use a long tracheal spray tube which I designed for the purpose. These methods of keeping the nasal cavity clean will in many cases lead to a gradual lessening of the formation of scabs, the patient needing to wash out his nose at rarer and rarer intervals, and I have seen complete recoveries produced in the course of a few years even in young persons. There is a decided tendency to spontaneous recovery towards middle life and it is in the younger subjects that treatment needs to be most persistent. The deafness and anosmia resulting from atrophic rhinitis are of course not curable.

Suppuration of the accessory sinuses as a possible complication of atrophic rhinitis should always be searched for but in the majority of cases is not present. Ordinarily empyema of the frontal sinus, ethmoid cells, maxillary antrum or sphenoidal sinus, though it may lead to the formation of crusts of dried discharge, causes irritative hypertrophy rather than atrophic rhinitis. Sinus disease accompanying rhinitis atrophicans must be treated by operation before the rhinitis can get well.

The great roominess of the nasal cavity in atrophic rhinitis favors the drying of secretions, which form a protection under which bacteria flourish, producing putrefaction. That decomposition does not always occur is probably due to the variable extent to which the secretion differs from the standard of normal mucus, as healthy nasal mucus is a poor culture medium for germs. The drying of the nasal secretion takes place much more readily in the dry air of heated houses in winter than when the atmosphere is charged with moisture in summer. For this reason many patients suffer an aggravation of their trouble in winter. On this account an effort should be made to have the air in the patient's room made as artificially moist as possible.

Some obstinate cases of atrophic rhinitis are but little improved by the cleansing treatment. For these the method called copper electrolysis is of value. As usually employed, a negative steel needle is inserted under the mucosa at the base of the septum while a positive copper one is pushed under the mucous membrane of the middle or lower turbinal. The sittings are of from five to ten minutes duration and the current strength from three to ten milliamperes. The negative needle is apt to create destructive cauterization if kept too long in one place. The effect of copper electrolysis is marked, the crusting, in many cases, ceasing for weeks or months after one or a few treatments. Recently I have tried instead of the needles, surface electrolysis with probe-shaped electrodes, the negative one, which may be of any metal, being wrapped in moist cotton and inserted in one nostril while the positive pole, a large copper probe, is moved about over the mucosa of the other naris. The current strength is from three to ten milliamperes and the time five minutes. For the nasopharynx I use a large ball-shaped copper positive electrode. I have seen marked lessening of the crusting follow this method but my experience is as yet too limited to assure its usefulness. As it does not cauterize, I suggest its trial before copper electrolysis with the needles is resorted to as it can do no harm.

Another method of treatment which I have found beneficial for obstinate crusting in atrophic rhinitis is massage of the entire mucosa of the nasal fossæ and through them of the whole surface of the nasopharynx, which may be readily reached through the wide nasal passages. Stiff metal applications bearing cotton swabs soaked in a ten per cent protargol or argyrol solution should be used. The rubbing should be vigorous and a fresh cotton swab used as soon as the one employed becomes filled with mucus. The nonsensitive mucosa bears the treatment without much or any reaction.

I am aware how imperfect this brief presentation of the vast subject of chronic rhinitis is, and how much has been omitted, but my object was to give chiefly my own observations and modes of treatment rather than a complete review of the subject.

288 HURON STREET EAST.

STOLL ON MEDICAL ETHICS.

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WHILE it is quite true that medical ethics do not differ essentially from those governing all right-minded men, there are certain details in the work of the physician that render special rules useful if not absolutely necessary. From the first days of the Hippocratic oath this fact has been accepted, and down to the present day, at various times, more or less extensive codes have been drawn up by individuals or by medical associations. In the latest works, such as those of Cathell[1], Mathews[2] and Moll, these are elaborated with a degree of fulness that endangers the wide diffusion of their usefulness. Medical works proper have become so specialized that there is no place in them now, but formerly writers were able to add some comments on the guidance of the physician's life either in systematic works or in collected essays. The short but interesting chapter by Benjamin Rush is well known, and there is another and contemporary article in the "Lectures on Some Chronic Diseases," by Maximilian Stoll, which, as it is not so accessible as that of Rush, has seemed to me worth reprinting. A few words regarding the author may not be amiss. He was born in 1742, and in 1767 went to Vienna and became pupil of the brilliant but erratic de Haen, favorite disciple of Boerhaave, and successor to Van Swieten in the chair of medicine in Vienna. Stoll became clinical professor in 1774, and for ten years had a successful career, but died in 1787 soon after an unfortunate turn in his fortune. His "Lectures on Chronic Diseases" were published in 1788, in Latin and German. It is from the German edition that I have translated the chapter on "Ethics." Rush's lecture was delivered so soon after the publication of Stoll's work that he can hardly have read the letter, so that the similarities of thought are most likely due to the fact that both men held views common to the eminent physicians of all times.

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[1] "Book on the Physician Himself, and Things that Concern his Reputation and Success." By D. W. Cathell, M.D. Eleventh edition. Philadelphia: F. A. Davis Company, 1902.

[2] "How to Succeed in the Practice of Medicine." By Joseph McDowell Mathews, M, D., LL. D. Louisville: John P. Morton & Company, 1902.

"THE DUTIES OF THE PHYSICIAN."

"The profession of physician is one of the most important in the state, for he busies himself with the preservation of human life; but it is also the noblest, in that it cannot tolerate mediocrity. Better none than bad physicians. Thousands have their lives saved by the physician.

"The young physician should begin his medical career well prepared by the auxiliary sciences and by clinical practice. Reading and oral instruction must go before, and practice at the bedside, under the direction of a clinical teacher, finish the academic instruction. The young physician must not be forced to be taught by his own unlucky experiments. But natural qualifications are also necessary for a physician; he must not be rash, reckless, frivolous, inconsiderate; no fancy-monger, no hypothesis-hunter; he should be serious, thoughtful, discreet; not a mocker of religion; for the physician has most cause for having true religion.

"The vice of drunkenness dishonors the physician, and makes him a dangerous man. The physician should lead a blameless life, never flatter vice and never make unfortunate persons the victims of his desires. Avaricious, gossiping, vain physicians, and vagrant, beggarly and dirty, dissipated physicians are the shame of humanity; such are also physicians who are gamblers. Some physicians retain only what they were taught, without adding the least new thing from the long practice they praise so highly. It would be well if every physician gave a complete treatise on at least one single disease.

"Some, and in fact most physicians, possess a great facility for writing prescriptions, but not the least in diagnosis.

"The physician who does not think most of his art and its perfection, will never make great progress.

"The practice of the art requires more prudence and practical judgment than erudition; without this practical talent no one can be a good physician, no matter how great his knowledge. One may be able to enumerate all the writers from Hippocrates down, and still not be able to treat the slightest fever.

"The physician has also some duties to observe towards the sick and their relatives.

"(1) The physician should apply his skill, so far as earnestness and care are concerned, without regard to the difference of classes; he should treat prince and beggar with equal care. High descent, importance, et cetera, sometimes embarrass the physician in the treatment of the great; he hesitates, becomes uncertain; orders many remedies hastily, often in too large doses, in order to cut short the disease; or chooses new remedies without sufficient reason. The success of physicians is enviable; they bring relief to unfortunates everywhere: often save the father of a family from the grave, and prolong the enjoyment of life for many mortals. Therefore the consciousness of noble deeds is a sweeter reward for the physician than fees.

"(2) He should not rush with violence and severity upon the invalid who is often more than naturally sensitive, irritable and impatient. He should learn to relieve diseases by medicines and sympathy. He should order no remedies that are more severe than the diseases. He should avoid announcing approaching death to the patient in a rude and unkind way; this is rarely necessary; for example, when the patient obstinately rejects all assistance. He should never abandon the patient, even if he cannot be saved; he should alleviate as much as possible and spare no pains, so as to appear, at least, not altogether powerless.

"(3) He should not be satisfied with a superficial examination, but examine everything most accurately, and write an accurate history of the case. A clinical journal is of great importance; it may be written either at home or by the bedside. The names of the patients should be written in cipher.

"(4) The physician may permit things that are useful or at least not injurious; he may approve of the opinions of the bystanders when they deserve it, but condemn them discreetly if they are objectionable. Methods of treatment and remedies of the bystanders may be accepted by the physician if they are harmless, in order to make the people more willing in other things.

"The physician may use the expressions peculiar to a country, sparingly, and in prescribing follow the customary mode.

"(5) If the disease is dangerous, the relatives, or those most concerned, must be informed.

"(6) The physician should make no account of difference of creed, but treat Jew and Christian alike.

"(7) He should not make known the existence of certain diseases such as epilepsy, hernia, pregnancy, confinement; but observe a deep and perpetual silence. He should not relate the histories of his patients in company; misunderstandings often arise from this, and other unfortunate consequences.

"(8) He should not, for gain, declare a mild disease to be serious; but also not a severe one to be mild.

"(9) He should not bargain about the fee, nor exact it by force, nor require it before treatment is ended.

"(10) If a consultation is requested, he should not decline it; he should even request it himself, in order to avoid all criticism; especially in the case of nobles and great personages.

"DUTIES TOWARDS COLLEAGUES."

"In consultations one should observe the following: Consultations are requested in doubtful cases, in clear but dangerous ones, and certain fatal ones, as also in chronic but curable diseases.

"Consultations of a few friendly physicians are the best. Often the physician may demand that one or more physicians be consulted.

"The physician should not prescribe for a patient already under treatment by another, nor accept a patient unless the regular physician has been dismissed and paid. He should not prescribe secretly.

"He should not discredit the treatment of a colleague in the presence of the patient, no matter whether it was good or faulty.

"In serious diseases he should secretly consult a friend.

"He should never undertake alone a case that does not belong to his line of practice, but should call in a surgeon, ophthalmologist or obstetrician.

"In consultations, the attending physician, after a friendly reception of the consultants, should state the history, show the prescriptions and give his opinion of the further treatment. Then the junior consultant should state his view, and the others follow in order. Finally the attending physician should follow the view of the majority. He should express his opinion with dignified frankness and without animosity. He should avoid all controversy. In this way he satisfies his duty and his conscience. He should keep nothing back from personal considerations.

"DUTIES OF THE PHYSICIANS TO HIMSELF AND FAMILY."

"The physician often treats himself and his family worst of all. The future makes him uneasy; self-love deceives him; it is one thing to see diseases in other men's bodies, and another to experience them in one's own body. Physicians who treat themselves tend to make a number of mistakes.

"The physician should have a professional friend in whose care he can place himself and his family.

"He should not belong to those who always take medicine, or else never, even when it is necessary; both discredit the art.

"The physician should free himself from the vulgar fear of contagion. Fear induces disease.

"Many young physicians in hospitals and in the army die. (1) The work is unusual and onerous; hospital and private practice are different. It would be better for such physicians to first serve as hospital assistants; (2) vexation and anxiety; (3) change of habits, for example, a water-drinker takes only wine, et cetera.

"The physician should read only practical works, the best of the ancients and the moderns; he should correspond on scientific matters with a friend; make a collection of medical observations, in order that he may keep abreast of the progress of his art.

"In conclusion I will mention some faults of physicians.

"The physician should be cautious in reference to women's diseases, so as not to mistake a pregnant for a nonpregnant woman, or provoke the menses of a pregnant one, or mistake pregnancy for ascites, or the reverse. He should treat a pregnant woman with harmless remedies until her delivery, or point out the way to a private confinement, and earnestly warn her against the use of abortifacients.

"The physician should not consider every disease a masked syphilis. I knew a physician who attacked the most innocent diseases, at the outset, with mercury. Even the public look on such a one with suspicion.

"He should not declare a nonvenereal leucorrhea to be venereal, whereby unhappy marriages often occur; he should not tell the wife of the secret disease of her husband.

"An honest physician will warn against a licentious life at every opportunity, and explain the disastrous consequences.

"Physicians often fall into a very practical error. They measure every patient by their own standard. A robust, broad shouldered physician, who gets bled often and copiously, applies this treatment to all his patients; on the other hand a delicate and irritable physician is excessively timid in the use of remedies.

"One should avoid believing, after thinking and reading for weeks on a single subject, that the latter can be seen everywhere.

"One should not insist stubbornly on a method of treatment that nature rebels against. Nor change remedies daily; by this one can recognize an undecided, wavering head. Nor should the patient be burdened by many remedies at once.

"The physician should not allow himself to be misled by moans, and by the tears of the bystanders, the children and the wife. The mind is shaken thereby, and self-command lost.

"Impatience, irritability and the petulant character of some people exaggerate all events, and so lead astray the physician, that he prescribes severe remedies for slight ailments.

"In hearing the personal histories of learned people, who interweave the disease with their own opinions, the physician can easily make a mistake. In general the educated are the worst narrators in this case, while on the contrary the peasant tells his story truly, sincerely and uncolored.

THE TREATMENT OF CHRONIC NONTUBERCULOUS INFLAMMATION OF THE LUNGS AND PLEURA.*

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The subjects of chronic pneumonia and chronic pleuritis—including desquamative pneumonia; interstitial pneumonia; cardiopulmonary indurations and infarctions; old empyemas; chronic fibroid pleuritic degenerations and hyperplasias—which formerly attracted a great deal of attention as separate affections have during the last two or three decades, owing to discoveries made in physiology, bacteriology and biology, been very often grouped together (with possibly one exception—pneumokoniosis-anthracosis) as pseudotuberculosis. Inasmuch as many of these cases do not depend upon, nor terminate in, tuberculosis, such an off-hand disposition of these various and complex conditions would seem objectionable, if not misleading. Although many of such cases do finally terminate in tuberculosis, still a respectable number from start to finish do not appear as tuberculous processes, either clinically or pathologically. It would, therefore, seem that to class them all as pseudotuberculosis would be about as illogical as to designate erythema a pseudoscarlatina. However, a discussion of the classification need not detain us, as I am sure all clinicians understand that there are chronic inflammatory or postinflammatory affections of the lungs—and more often than otherwise connected with similar conditions of the pleura—which are characterized especially by the development of connective tissue.

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* Read by invitation before the ANN ARBOR MEDICAL CLUB.

Indeed, the pathology is tolerably well established, although certain varieties are observed and furnish matter for discussion. In the case of an alveolus, for instance, being the seat of irritation, it is at once subject to exudation of leucocytes, formation of fibroblasts, et cetera, similar to the advent of the early stage of lobar pneumonia, with the exception, however, that no hemorrhage has previously taken place as in a lobar pneumonia. Likewise, filaments of fibrin make their appearance in the mass, penetrating the walls of the alveolus to the neighboring ones, the capillaries become engorged or obliterated, and the epithelial lining desquamates its cells more or less, which cells become part of the alveolar contents. But instead of the exudate liquefying and being removed, as in acute lobar pneumonia, it takes part in the organization into connective tissue which is proliferated or "budded" by the epithelial boundaries of the alveoli. Undoubtedly Flexner is right in his statement that in all of these pulmonary disease processes either the exudate is taken care of and removed by liquefaction through the operation of the normally present ferments (enzymes), an action which he denominates "autolysis," or else organization of these exudates takes place. Now this organization into connective tissue is what happens probably in all of the chronic pulmonary and pleural diseases under consideration. It might serve toward a better comprehension of the subject if we were to classify this range of cases under the following captions, namely: bronchitis, descending bronchopneumonia; unresolved lobar pneumonia; pleuritis—either fibrinous, serofibrinous, or suppurative; syphilitic bronchoadenopathies; alcoholic adenopathies; and cardiopulmonary lesions, such as congestions, infarctions and indurations. Any one of these may be either consecutive or secondary in regard to the time of development. A certain number of them are undoubtedly primary, that is to say, coming on insidiously, and progressing gradually and independently of any particular microorganism or marked antecedent acute disease.

In this connection I wish to call attention to one of the points which I desire to bring before you, which is that in most of the cases of chronic pneumonia the pleura participates. Moreover that many of them have undoubtedly originated from an antecedent fibrinous pleuritis. This event should not be an unexpected one when we consider the extensive distribution of lymphatic tissue throughout the lung—near its surface—next to the pleura, as well as elsewhere; and also the extensive communication between the pulmonary and pleural lymphatic system, by the subpleural layer being continuous, according to some histologists, with the lymphatic system of the lungs. On account of this anatomical and histological formation, the chronic connective tissue proliferating diseases of the lung, likewise those of the pleura, at once come into a common field of action. Undoubtedly in cases arising from unresolved lobar pneumonia wherein the disease focus has been located some distance from the surface, the pathological evidences of involvement of the pleura are sometimes wanting; but such cases, according to the writer's observation, are very rarely met with. Some pleuritic inflammation may almost always be found, however small in extent. Marchand, Eppinger, Nothnagel, and others, all emphasize the observation that in almost all so-called chronic inflammations of the lungs, extensive callous pleural adhesions are found, thus diminishing the respiratory action of the lung and, more or less, the blood supply. Cases of unresolved pneumonia if not terminating by the formation of abscess, gangrene, or tuberculosis, are almost sure to result in a chronic pleuropneumonia, with extensive proliferation of connective tissue from the endothelial lining of the alveoli. Occasionally there are found in connection with this chronic disease process, such bacteria as pneumococci, staphylococci, or even the streptococci, but there seems to be a lack of evidence that these microorganisms have played a primary part in the causation. According to Buhl these microorganisms, together with several forms of micrococci found, are supposed to have been inspirated from the bronchial tubes into the diseased area.

It may therefore well be asked whether microorganisms really have much to do with the pathogenesis, excepting in a very accidental way, that is, if we exclude all of those cases characterized by pulmonary abscess, empyema, or tuberculosis. In the latter instance—secondary tuberculosis—the question arises in view of the long chronic course of the disease, as sometimes observed, whether the tubercle bacilli engaged may not belong to one of these families which (according to some recent promulgations) do not extend their sphere of action beyond the locality invaded. I am inclined to think that the explanation offered by Flexner fully accounts for "unresolved pneumonias" by the absence of natural ferments which produce solutions of the exudates, as well as softening of the engorged capillaries, by autolysis, and that also the absence of these enzymes or lysins may be the cause of the connective tissue proliferations.

At this juncture arises the etiologic question as to whether we can accept the statements of some pathologists and bacteriologists that there are seven or eight distinct varieties of tubercle bacilli, one of which is capable of producing general infection, while the others are capable of producing local disease only, such as tuberculosis of the kidneys, ovaries, or testis. If so, then all of these cases of so-called pseudotuberculosis, even those bearing the distinct type of connective tissue formation arising from the endothelium, or in the pleura from the mesothelium, might be accepted sometimes as the initial irritation of the tissues. But as both clinical and pathological evidence is yet wanting to establish such a supposition, it seems to me that we are compelled to accept the pathogenesis as laid down by Nothnagel, Heschel, and some others, namely, that there is a chronic pneumonia or chronic inflammation of the lungs signalized from start to finish by the production of connective tissue, and that such cases are nearly always connected with a similar morbid process taking place in the pleural membrane as well.

The routine and classical medical treatment has been mainly the administration of iodid of potassium, cod-liver oil, creosote, strychnia, with extra food, et cetera. Various sorts of specific treatment have been introduced from time to time with but partial success. Undoubtedly in the way of medicinal treatment, speaking generally, the administration of iodin, phosphorus, and mercury offers the very best prospect for the patient. Mercury protiodid, or biniodid, has proved very beneficial in my experience. Mercury, and also phosphorus seem to have a selective action on fibrinous or connective tissue hyperplasias, the latter especially inducing a fatty degeneration not only of adventitious formations, but to a limited extent of normal structures of this character, after long continued administration. Besides this, the rational application of climatic environment seems to be of great importance. Added to this may be mentioned respiratory gymnastics, a measure of great importance also, and one which, as you are all aware, has received far less attention than it deserves. In speaking of the climatic treatment of such cases, I shall dwell a moment upon the importance of getting at the right altitude which, after all, is not a simple matter unless we can trust the sensations of the patient. By this I mean, that sending a patient with a lung restricted in its movements by fibrinous and pleuritic adhesions—its resiliency thus partially lost; while the healthy lung is more or less emphysematous, and the heart either dilated or atrophied from myocardial insufficiency—directly to a high altitude from a region like this, is sure to bring about untoward results, if not the speedy death of the patient. This is not a fanciful idea by any means, for I have known several instances wherein such advice having been given and followed by the patient has brought about very evil results. A patient in such a condition—if the circulation will allow—should be first sent to a warm, moist climate, where the activities of the skin can be gradually excited and the superficial capillaries dilated, the pulmonary veins relieved, and the intestinal mucous membrane allowed to share in a recrudescence of circulatory activity. For instance, after a sojourn along the Gulf, or in the subtropics, for two, three or four weeks, the patient should then gradually journey toward the southwest attaining no great altitude for at least six weeks or two months, after which he may seek a residence in an alitude between two thousand and three thousand feet; and then after a lapse of a month or so, a still higher one, up to about five thousand or six thousand feet, provided that respiration does not become too much embarrassed by the change. Should this happen, a halt must be taken, and he should remain at the lower altitude until such time as the lung capacity will allow of a higher one being reached. During this time the medicinal treatment by iodin, phosphorus, and mercury (used alternately, week about) should be continued as thoroughly as the patient can well bear it. The skin should also be treated daily by salt baths and salt massage, if practicable. However, in many instances, the very best devised methods of medicinal treatment will fail in arresting the process, or restoring the disabled lung to any degree of usefulness. I believe that in such cases resort should be taken at once to surgical treatment. Undoubtedly in cases giving evidence of the presence of pus, either in the lung or in the pleural cavity—especially where the pleural cavity has been altered from the normal by the organization of plastic material or by close adhesions with the lung parenchyma—surgical treatment should be attempted.

The surgical treatment of pulmonary abscess and empyema is a very old procedure, puncture, exsection of ribs, and even pneumonectomy having been performed seventy-five years ago. Much discussion has taken place from time to time whether the abscess should be punctured early, as soon as discovered, or later, after certain impending constitutional symptoms have subsided. Also whether or not the parts should be interfered with if a sufficiently large bronchial fistula had been established. Godlee thinks that persistent attempts should be made with a needle to locate the collection of pus, and that a thoracotomy should be made at once after discovery of the pus. Undoubtedly when the case is a plain one, and when there is no danger of infecting healthy lung tissue by going through it to get at the abscess, surgical treatment should at once be instituted. In many cases a thoracotomy should be made whether there be empyema or not, especially if there be pluritic adhesions which hold the lung,—a condition which probably exists in eighty to ninety per cent of such cases. In some cases, as we are aware, pulmonary abscess or empyema, or (complexly) both, intervenes between the acute and the chronic stages. Nevertheless behind, or coexisting with these conditions, connective tissue proliferation will be found, so that the evacuation of the diseased morbid products, either by nature or art, will not suffice in many instances to stop the continuance of this proliferation, the sequence of which is the obliteration of lymph spaces, lymph-vessels, blood-vesssls, and, often, the pleural cavity, by new growth. The inherent intensity of the process seems to be regulated by circumstances often beyond our control or foresight. In many of them, as you are aware, a so-called bronchial catarrh is a constant accompaniment, while in some of them there is little or no cough or expectoration. This seems to take place, or not take place, independently of any previous fistulous connection between a bronchus and a pus pocket, either of the lung or of the pleural cavity, the process going on for months and months, sometimes years, before terminating in gradual inanition or supervention of regular tuberculosis. The fact of medical art having been so impotent in arresting these pathological changes has, of course, led to the creation of a great deal of thought and investigation on the part of physicians and surgeons, so that today we are in a position to ask, as our predecessors did, what can we do by medical or surgical art to save the lives of the people so affected? A piece of two or three ribs should be removed, so that the adhesions may be broken up and the lung freed, and in all cases showing the presence of a pus pocket an attempt should be made to evacuate it. This oftentimes is easier said than done, however, for it is not without danger even in the most chronic cases, for if pus pockets are present there is great danger of infecting some portion of the torn tissue, either lung tissue or pleural tissue. I have even had fatal results from sepsis in cases wherein the pleura was so absolutely transformed from its physical characteristics as to resemble dermal tissue more than serous tissue. Moreover, there is great danger in evacuating a pus pocket of the lung, which may be deep seated, by infecting the intervening lymph spaces of the lung, thus bringing about a fatal sepsis. There is danger, also, in all cases, wherein extensive pleural adhesions are broken up, of infecting the lymphatic tissue, for it must be remembered that even the parietal pleura, as well as the lung, is rich in lymphatic vessels; and that this lymphatic tissue is closely connected with the lymphatic glands and vessels of the abdomen. So that complications may arise in the form of infection of the abdomen by such lacerations. With children there is also a danger of inducing fatal meningitis by extensive lacerations of the pleura. I have had such uniformly grave results from exsecting large portions of the thorax, or large strips of deformed callous pleural membrane, that I do not hesitate to condemn such extensive surgical procedure, except in cases presenting a very circumscribed area of altered tissue. Eislander's operation and its various modifications, in my opinion, are seldom advisable, especially in left-sided cases. Making a window from the exsection of three or four inches of two or three ribs is usually sufficient, in almost all cases, to enable one to gently break up adhesions and release the bound down lung enough to get further expansion afterwards. Concerning the pleura which, as stated before, is always accompanied by a similar connective or fibrous tissue transformation to that of the lung parenchyma, it is seldom necessary to dissect it away unless it takes part in keeping up a pus secreting sac which cannot be otherwise obliterated. It is usually sufficient to keep up a vigorous irrigation with a carbolic acid, iodin, formaldehyd, or bichlorid of mercury solution to bring about a passive state, so that the external wound can be allowed to close and the patient be allowed to exercise the disabled lung by gymnastics. Caution is necessary, I think, about the injection of solutions of hydrogen peroxid, especially in left-sided cases. I have had one fatal result and nearly two from the use of this agent in old people in left-side cases, the sudden distention from the envolving gas evidently producing too much direct pressure on an enfeebled heart (myocardium).

In conclusion, I do not hesitate to say that quite a number of these sufferers—whether affected by chronic empyema, pulmonary abscess or not—may be permanently relieved by a judiciously made operation for breaking up the adhesions, or evacuating the morbid contents of fibrous walled pockets and subsequently draining them. I might add, however, that cases for operation should be selected only after careful examination by auscultation, percussion, and the x-ray, and a careful consideration of the possible complications or untoward results of such a contemplated operation. By this suggestion, I allude to the probability of inducing sepsis, acute pleuritis of the opposite side, meningitis or some acute abdominal disease.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, DECEMBER, 7, 1903.

THE PRESIDENT, JAMES HAWLEY BURTENSHAW, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

DOCTOR V. C. PEDERSEN read a paper entitled "Acute Edema of the Lungs Secondary to Ether Narcosis; Recovery." The patient was thirty years old and healthy. Immediately after a thirty-minute administration of ether for an operation for piles, he developed acute edema of the lungs which very nearly proved fatal. The induction of anesthesia caused great excitement and muscular rigidity in the extremities which persisted about ten minutes. During that time the ether was administered rather freely but not excessively, in so far that less than four ounces was poured into the cone during the entire operation. The clinical picture of the edema was made up of profound cyanosis followed by cardiac weakness, but was not accompanied or followed by any mucus in the mouth, nose or throat. The resuscitation was accomplished by free use of cardiac stimulants, notably strychnin, whiskey and nitroglycerin and the respiratory stimulants, like atropin and elevation of the foot of the bed. General, dry cupping of the chest was also instituted, and after about one hour of constant work over the patient recovery ensued, without, however, the appearance of any fluid in the throat from the lungs. No later lung complication occurred.

The speaker stated that some twelve cases of a similar nature have been reported in medical literature, all of them fatal, and many of them showing as in this case, an insidious onset at the end of the operation, notwithstanding the fact that anesthetization had been without incident. He thought this case worthy of publication for the reason that it illustrated the fact that certain persons are individually very susceptible to ether fumes, the gas being irritating to the lungs. He, therefore, holds that whenever any difficulty appears in the early stages of anesthesia with ether, great caution and deliberation should be exercised in overcoming them. He stated that, in his opinion, aside from the very important factor of individual susceptibility, this case of edema may have been due to somewhat undue exhibitions of ether early in the narcosis, although after all, the total of ether exhibited (less than four ounces) proved that this excess had not been very material.

The essayist also presented a chloroform dropper which he had designed with the purpose of regulating the size of the drop allowed to flow from the tube which was inserted in the stopper. A large, small or medium drop could be allowed to fall on the mask, and at more or less frequent intervals, according to the desire of the anesthetist.

He also exhibited a new device for attachment to Bennett's ether apparatus, designed to greatly facilitate anesthetization in cases of operation on the larynx and trachea.

DISCUSSION.

DOCTOR THOMAS L. BENNETT: Pulmonary edema following the administration of ether is not a common occurrence. I have seen three or four cases in which this condition had been present in lesser degrees than in the case reported by Doctor Pedersen. The morbid anatomy of pulmonary edema is very likely that of congestion of the lungs, similar to that seen in the pleural cavity. Some patients are susceptible to pulmonary edema, as, for instance, those inclined to congestion of the lungs or those having tuberculosis. The anesthetist should be on his guard to notice any failure of the left side of the heart, either from weakness or from complications of the aortic valves or from aortic stenosis. The congestion from ether is usually sudden, but the edema may be quickly developed or it may not become apparent until the administration is stopped. In the case reported by Doctor Pedersen, partial edema of the lungs probably occurred during the early administration of the ether, and when the ether was stopped, a certain amount of stimulation was withdrawn, and the consequent depression favored the development of the edema. Whenever, during inhalation, the patient presents sympotms of cyanosis, he should be examined for edema, notwithstanding that his inhalation may be free. There is usually a rapid pulse, and the patient, if in an excessive case, will expel mucus from the cavities. In the treatment, prophylaxis is the most important feature. The ether should not be pushed so rapidly as to set up this congestion. The anesthetic should be changed as soon as the first symptoms are noticed, and it should be given in very small quantities, so that the patient may cough or vomit and so expel what is in the lungs. Strychnin should be given for stimulation. Artificial respiration, with oxygen, preferably, does much to start the circulation and may expel the fluid from the chest and lungs.

DOCTOR PEDERSEN: I think the choice of an anesthetic should depend to a great extent on the personal equation. I have recently administered ether to two patients who had suffered from bronchitis previous to the time of operation. The anesthetic, in both instances, had been chosen by the operator. The first patient was given ether, and developed a bronchial pneumonia, but did not die. The other patient was a man for whom the operator requested chloroform. Ether was administered but he became cyanotic and chloroform was substituted.

He endured the remainder of the operation without difficulty, and made a good recovery.

REPORTS OF CASES.

ERYTHROMELALGIA.

DOCTOR J. C. LYNCH: I desire to present a patient suffering from red, painful, extremities. About four years ago the patient had severe burning pains, first in the right and then in the left foot. The pain was intensified by standing or walking, and several months later he noticed that the painful areas were red and swollen and that the ball of the great toe was violet after exertion. Two years ago the middle toe of the left foot was amputated because of the great pain. The toes of both feet are red; over the metatarsophalangeal articulation the skin is of a violet hue; the superficial veins are prominent and the parts are painful to pressure, but do not pit. When the feet are elevated the congestion disappears; to return when the feet are dependent. Sensibility and thermal sensation are not disturbed. The patient's condition improves during the cold weather. The pathology of this condition is not well understood. S. Wier Mitchell consideres it a vasomotor disturbance. It is probably due to a peripheral neuritis of the branches of the plantar nerves associated with diseased blood-vessels. Most of the cases so far recorded have occurred in men during middle life. Long hours of standing, associated with hard work, worry and exposure to various temperatures are important causative factors. Various infective diseases, such as gonorrhea, malaria, syphilis, et cetera, may also be important factors. It also occurs as a symptom in certain organic diseases of the central nervous system. Erythromelalgia may be confounded with Pick's erythromelia and the stage of local asphyxia of Raynaud's disease. In erythromelia there is a circumscribed reddening of the skin, followed by venous dilatation, confined to the extensor surface of the extremity. There is absence of pain and increased surface temperature and no change on altering the position of the extremities. In Raynaud's disease eighty per cent of those afflicted are women. It begins with local ischemia; pain may be absent or acute; it has no relation to position; it is unaffected by season. In many cases the symptoms are brought on by cold. It is anesthetic to touch, surface temperature is much lowered and there is symmetrical gangrene.

GENERAL PARALYSIS OF THE INSANE.

DOCTOR LYNCH: This patient illustrates the promptness with which the luetic poison attacks the central nervous system. The patient, twenty-seven years of age, had a sore on the penis, which was cauterized, and he was given "pink tablets." This treatment made him much worse and he consulted another physician, who gave him black ointment to rub in every night. He continued this for about three weeks, when his eye became sore and painful and he consulted an oculist, under whose care his eye improved, but his throat became affected. The oculist sent him to another physician, under whose care he remained for about three months, when he lost his voice. He then consulted a specialist on the throat, and continued under his care until he became demented. The essential features of his disease are that it began with a series of epileptic seizures, on recovering from which he was affected by temporary aphasia and paralysis, which disappeared in a few days and was replaced by marked mental impairment. The mental condition gradually improved, until he was prostrated by another seizure. He cries continually, wants to go to school, and is unable to answer any questions intelligently.

DISCUSSION.

Doctor William B. Pritchard: In my opinion, the difference between Raynaud's disease and erythromelalgia is one of degree and sometimes symptomatic, but that the essentials of the conditions are identical.

Doctor M. Packard: These cases are much more common than is ordinarily supposed. I have seen seven of them in the Polyclinic Dispensary during the preceding summer. The pathology of erythromelalgia and Raynaud's disease is practically the same, being an obliterating endarteritis. They are all due to contraction, as Mitchell showed in 1870. Two cases of this nature in Doctor Sach's clinic developed into gangrene. In Raynaud's disease the pain is stabbing, while in erythromelalgia it is constant. Several cases of erythromelalgia were sent from the Hospital for Ruptured and Crippled with a diagnosis of flat-foot, owing to the character of the pains, and while these patients may have flat feet, treatment by the Whitman brace only irritated the condition, due to the pressure it exerted. Cold water and potassium iodid proved effective, but the most successful agent in dilating the arteries was nitroglycerin.

Doctor Pritchard: Referring to the second patient presented by Doctor Lynch, I would like to call attention to a point of much interest to neurologists in the development of general paresis. Twenty years ago, if a diagnosis of general paresis were made, it was safe to assume that the patient could not live more than two years, but today it is reasonably certain that he would be alive ten years from the date of the diagnosis. For this transformation the speaker knew of no explanation. Another point of interest is that some years ago, before it was safe to make a diagnosis of general paresis, the patient must have shown some symptoms of grandiose delusions, but today nearly fifty per cent of the patients suffering from this disease are without any delusions of grandeur whatever, and the condition is gradually tending toward a type that will be relatively free from such delusions.

EPILEPSIA LOQUAX.

Doctor Pritchard: I wish to present a patient suffering from this condition, aged forty-five years. I think this is the only case of the kind I have ever seen. About nine years ago the patient began to suffer from attacks of vertigo and sudden pallor, the first of which was brought about by a shock. These attacks continued at irregular intervals for five years, when, at the onset of an attack, a spasm of the face was added to his other symptoms. He has continued to have these attacks with increasing severity and frequency up to the present time, when they assumed the type he proceeded to describe: the patient's face becomes very pale and twitching begins over the left eye (a few years ago the twitching had been over the right eye and it had been transferred to the other side of the face); then the muscles of the whole face begin to twitch, the hands become fixed, and a most profuse diarrhea of speech follows, with perfectly distinct articulation continuing for a minute and a half. This is followed by characteristic semicoma lasting for an hour or two, when the man's condition becomes normal. There is absolute loss of memory from the occurrence of some incident preceding the pallor until the awakening. The centre of explosion in such cases, it is assumed, is in the region of the centre of speech (Brocas convolution). Usually epileptics do not talk, yet this patient's only evidence of epilepsy is in his talking.

DISCUSSION.

Doctor D. S. Dougherty: While I had charge of the Epileptic Wards at the New York City Insane Asylum, Ward's Island, one patient would have seizures in a corner, remain rigid for a moment, and then talk incessantly for two or three minutes, have a slight twitching, gall, and the attendants would put him to bed, when he would sink into natural slumber.

ANEURYSM WITH UNUSUAL COLLATERAL VENOUS CIRCULATION.

Doctor Morris Manges: I desire to present a patient for Doctor Lynch. The man is forty-eight years old, with the following history: He complains of pain through the chest and backbone, which is intensified on pressure. He first noticed this symptom six months ago, and it was followed, three months later, by pain over the heart and dry, brassy cough. Ten years ago he had a typical chancre. Physical examination reveals a large mass occupying the upper right part of the chest, which on palpation is seen to have some expansile pulsation. On either side of the middle line of the abdomen there is a double set of enormously dilated and tortuous veins representing a caput Medusæ. Nor is this the only evidence of pressure; some of the upper veins are enlarged, also the veins of the back, especially on the left side. There is also a marked enlargement of the veins of the upper extremity, less marked on the left side. Examination of the heart shows the apex beat to be in the sixth space. Over the tumor nothing would lead one to suppose it was an aneurysm except the slight expansile pulsation. One hears nothing except the heart sounds sharply accentuated. Deep palpitation behind the episternal notch is negative and Oliver's sign is absent. In a case of this kind one would naturally think of an aneurysm, of a gumma or other neoplasm. A new growth can be eliminated on account of the situation of this enlargement and the conclusions given. The question of gumma may be eliminated because of treatment, the patient having had iodides without any results whatever. Considering the history, the only inference would be that it is a case of saculated aneurysm filled with an enormous amount of blood clot. As to the collateral venous circulation, one's first conclusion would be that something is obstructing the iliac veins. I have quite recently seen two cases beginning with either obstruction of the portal circulation or of the inferior vena cava. I have seen a number of cases of obstruction of the portal circulation and of the vena cava, but ascites had been a more or less pronounced feature in most of them. The marked venous collateral circulation in this case could be explained only by the presence of a large mass compressing both superior and inferior cavæ. This would be caused by the presence of a large aneurysm of the ascending aorta, of which the external evidences are to be seen in the sternal tumor. The fact that there are so few symptoms is caused by the aneurysmal sac being filled with a very thick layer of organized blood clot.

DISCUSSION.

Doctor Robert H. M. Dawbarn: This case is particularly interesting because of the anastomoses. I have never before seen so typical an instance of the caput Medusæ. There are a dozen ways whereby the venous blood may, in obstruction of the portal vein, pass through the liver and reenter the inferior vena cava. In my opinion, a more important one of these in accounting for the caput Medusæ than the instance mentioned by the speaker is the circulation from the liver to the belly wall, through the reopened umbilical vein of fetal life. In about twenty per cent of such cases, this cord again becomes a vein. In the case of the patient before the Society, I think that perhaps a small gumma of the liver in the region of the portal vein might account for the venous distention. Much larger doses of potassium iodid must be given before one could eliminate it as a cause. The fact of it being an aneurysm would point somewhat toward tertiary syphilis, which so frequently is the cause of producing atheroma of the arterial walls. I do not consider the absence of ascites, even with great portal venous stasis, as effectually destroying the diagnosis of a gumma of the liver.

Doctor Albert Kohn: I am impressed with the lack of symptoms of aneurysm, even though the mass is filled with blood clots. Pulsation is very slight. The hypertrophy of the heart might be explained by arterial sclerosis of specific origin. Undoubtedly there was pressure on some of the larger trunks supplying the upper extremities, but before making a diagnosis, it should be considered that the treatment had not proved anything. The patient should have iodides in increasing doses, up to one hundred or two hundred grains a day, or even more, and injections of bichlorid of mercury and salicylate of mercury. Very often injections of mercury will give results when iodides have absolutely no effect.

Doctor Packard: I would suggest that the venous varicosities on the chest and abdomen may be due to pressure on the internal mammary vein, with an anastomosis of the superficial epigastric.

Doctor Morris Manges: I still think it is an aneurysm. If it were a gumma also it would have eroded the ribs or the sternum.

DISPLACED LIVER AND KIDNEY.

DOCTOR KOHN: I desire to present a patient with displaced liver and kidney. The woman, when she first appeared at the clinic, two years ago, gave a history of what was then diagnosed as colelithiasis. The gall-bladder could be distinctly felt. Some time ago she again presented herself, and on examination the liver was found to extend down to the umbilicus and the dullness to begin at the eighth space. On making a slight palpation over the edge of the liver the gall-bladder was found beneath the edge. The kidney could be felt displaced into the right iliac fossa. The entire process had occurred within the last two years.

DISCUSSION.

DOCTOR BROOKS H. WELLS: I have had a similar case in which a diagnosis of fibroid uterus had been made. Upon examination, the upper edge of the liver was found to be two inches above the umbilicus. I made a median incision from the lower edge of the liver, seized the round ligament at its insertion into the liver, passed a suture of kangaroo tendon over it, so placed that it could be pulled back and forth, and then pushed the liver into its proper place. The patient made an uncomplicated convalescence.

GALL-STONE ILEUS.

DOCTOR MORRIS MANGES: I wish to present specimens from a male patient, fifty-eight years of age, who, a few months before had had an attack which his physician had considered to be appendicitis. About a week before he was seen by me he had abdominal pain and severe attacks of vomiting at irregular intervals, and there was no movement of the bowels for about a week. On the day he was seen he had a movement following cathartics and enema, but in spite of this the vomiting, which by this time had become more or less constant, did not abate. The vomiting was characteristically fecal. There was no fever, nor was there at any time evidence of jaundice. Examination of the abdomen revealed nothing but a vaguely defined mass in the right hypochrondrium. There was no increased peristalsis nor was there any evidence of distention. The introduction of a stomach tube brought up very large quantities of fecal material, acid in reaction. A fairly thorough lavage gave the patient great comfort for twenty-four hours. Recurrence of the vomiting, however, on the following day rendered exploration for an unrelieved abdominal obstruction advisable. The operation was performed by Doctor Lilianthal, an incision being made over the right side of a vaguely defined tumor in the right hypochrondrium. A pus cavity was encountered and in this area a number of various sized gall-stones were removed, followed by drainage of the wound. The patient's condition at the time of operation had been desperate and was not improved by the operation, death occurring on the following day. At the autopsy one very large stone and several smaller stones were found high up in the duodenum, the largest stone being over an inch and a half in diameter, practically filling the lumen of the duodenum. Very dense adhesions bound down the gall-bladder and duodenum to the stomach. The gall-bladder was very much thickened, and at its lower portion was a large opening communicating with the duodenum. It was through this opening, undoubtedly, that the stone had escaped into the duodenum. Doctor Manges closed his presentation with a brief discussion of the rarity of gall-stone ileus and some of the features of its differential diagnosis.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., Ann Arbor, Michigan.
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AND
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THE TREATMENT OF PNEUMONIA.

Lees (*British Medical Journal,* November 29, 1903), in his second Harveian lecture on "The Treatment of Some Acute Visceral Inflammations," considers the subject of pneumonia. He impresses upon the reader the great importance of thorough and systematic examinations in these cases. The author begins his remarks on the therapy of this disease with these appropriate words:

"Every pneumonia is a fight for life. If we realize this we shall never neglect its earliest stages; we shall not fold our arms in unobservant expectation, letting slip our opportunities of helping the patient in his struggle until we are confronted with disaster which we have done nothing to avert. If we are to succeed in this it must be by the most unremitting attention, the most minute judgment. There is no disease which makes more demands upon the practitioner than pneumonia. There is none in which his action or his inaction, his wise interference or his inertia, may more affect the result. Every fresh move of the enemy must be at once detected and counteracted. The entire position of the attack must be estimated at every visit."

Pneumonia tends to kill usually by cardiac failure, not of the left side of the heart, but of the right; not by syncope, but by asphyxia; not through enfeeblement of the left ventricle, but through paralysing overdistention of the right. It must be remembered that enlargement of the left ventricle may be found as the result of some previous disease.

The author states that within forty-eight hours from the onset evidence of dilatation of the right auricle can often be detected by percussion in the fourth right interspace. The first symptom arising from this increased distention of the auricle is increase in the respiration rate, later by lividity of the lips and cheeks with pallor. "This right heart misery may be quickly relieved by a little loss of blood"—three to six leeches—the area of dullness of the right auricle thus rapidly diminishes to the normal, and the relief will usually last for forty-eight hours. The author urges the great necessity of leeching at this time, or what might be better, venesection, and remove six or eight ounces of blood. The amount depending upon the degree of dilatation of the right auricle. Care must be taken not to mistake auricular dilatation for pulmonary consolidation or pleural effusion, and not to underestimate because of a local hyperresonance of lung. Of the two errors the latter is the more serious.

Milk diet is the best. Sleep is most important if the patient is to fight a winning battle. Make sure that the patient sleeps the first three nights of his illness. When the fourth or fifth comes the physician dares not administer hypnotics because of the danger of inducing a fatal coma. Morphin given at the time of great distention of the auricle diminishes the activity of the respiratory center, on the energy of which the patient's life depends. The way out of this dilemma is in relief of the right heart.

Cardiac tonics are often of much service in the later days of pneumonia. They ought to be begun about the third or fourth day of the illness, and given freely. Strychnia is the most useful. The author thinks oxygen a most valuable remedy, and ranks it with strychnia in the treatment of pneumonia.

Ice is of great value. Two or three ice bags should be packed over the affected area, sometimes four. Care must be taken to keep the legs and feet continuously warm by means of hot water bottles. The ice bags should be placed next the skin and held in place by passing their screw caps through holes cut in a binder loosely fastened around the chest. Leaking must be carefully avoided.

It is impossible to do justice to this article in so short an abstract. The keynote running through the whole paper is the physical examination of the patient. The treatment of pneumonia is thus placed upon a scientific basis and the fallacy of specific methods so commonly employed and relied upon is plainly shown. D. M. C.

SURGERY.

By HENRY O. WALKER, M. D., Detroit, Michigan.
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AND
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THE CAUSES OF OCCASIONAL FAILURE TO CURE GALL-STONE DISEASE.

William J. Mayo, M. D., of Rochester, Minnesota (*Journal of the American Medical Association,* December 26, 1903). The work of the Mayos in gall-bladder surgery has been so successful that anything they may have to say on the subject will merit the attention of the medical profession. They report six hundred and thirty-one operations in their own practice, with only nineteen cases requiring a second operation. They have also performed a second operation on a number of cases previously operated upon by other surgeons, all of which, with a single exception, occurred in complicated cases, delayed surgical interference being the most common indirect cause of complications. Cases wherein colic and perhaps slight jaundice are the prominent symptoms usually terminate in a crippled gall-bladder which may right itself in time and the patient remain well.

The most common cause of returning trouble is the failure to remove all stones. These will sometimes work out through the fistula. The finger should be used as a guide at the time of operation to determine whether all stones have been removed. Stones in the cystic duct may be overlooked, but when this organ is found to contain them it is ligated, and the stones together with the entire gall-bladder, removed. Twice a stone was left in the distal portion when the bladder was removed from above downward. Another cause for return of the trouble is second obstruction to the cystic duct. This may lead to opening of the fistula or painful periodic discharge of bile through the constricted duct. When the duct is constricted the gall-bladder should be removed. Septic cases require drainage until the bile is sterile. If the fistula closes and there is annoyance, it must be reopened. Stones in the common duct may give little discomfort until the cystic duct becomes obstructed. The stone may have been overlooked at the time of the operation. Chronic pancreatitis may result from the presence of stones in the common duct. Such a condition should be met by cholecystenterostomy. Cancer may follow continued irritation of the duct or bladder by stones. A thickened gall-bladder should be regarded with suspicion and removed. Persistent fistula usually means an obstructed duct. Secondary operations are comparatively safe.

GYNECOLOGY.

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TREATMENT OF INCURABLE CARCINOMA UTERI.

Edward E. Montgomery, M. D., of Philadelphia (*American Surgery and Gynecology,* January, 1904). In selected cases of early involvement of the uterus, the radical operation should be performed. In the great majority of cases the patient, when she comes under observation, has passed the period where radical measures are applicable. The author directs attention to two varieties of cancer:

(1) The squamous cell carcinoma which has its origin in that portion of the cervix which projects into the vagina. This portion has no glands and the disease consists of proliferation of the epithelial cells, which form nests and invade deeper structures, extending out-

ward toward the vagina. The entire cervix may be destroyed and yet the patient may survive operation five to eight years without recurrence.

(2) That form of carcinoma which has its origin in the epithelial lining of the cervical canal and the glands of this part. This is known as adenocarcinoma of the cervix. It rapidly involves the glandular structure. It is slow to have its exit at the external os and frequently, before the slightest external sign of breaking down, the cervix is found infiltrated and the paracervical tissue involved.

The radical operation for squamous cell carcinoma should never be done when the operator cannot perform the operation within the confines of healthy tissue. Such an operation should not be done when the disease has involved the bladder or rectum; when it has extended to the vagina and invaded the paravagnial tissues.

The radical operation should not be done in adenocarcinoma of the cervix when the broad ligament on either side, or the bladder is involved. The disease will rapidly return in the raw surfaces left by the operation and the progress of the disease will be more rapid than if the disease had been permitted to pursue its normal course undisturbed.

This class of cases is usually very much neglected. Much can be done to prolong life, delay the progress of the disease and ameliorate the unpleasant symptoms. To lessen hemorrhage, offensive discharge and absorption of toxic products, one must get rid of the tissue which is undergoing necrotic changes and endeavor to reach the zone of healthy tissue. This may be done by deep curettage, cutting away necrotic masses and stopping hemorrhage with hot water or the thermocautery. The improved condition may be prolonged by packing the cavity with iodoform gauze, which should be removed on alternate days and, after painting the cavity with a strong tincture of iodin, replace the gauze.

Similar results may be obtained by packing the uterus with zinc chlorid, four to eight drams to the ounce, on cotton pledgets, after removing the necrotic tissue with curet and scissors. The vagina and healthy tissue may be protected from the corroding action of the zinc by coating these parts with vaselin containing one dram of sodium bicarbonate to the ounce.

Local application of carbolic acid, nitric acid, acid nitrate of mercury and the use of the *x*-ray have been employed with a view to arrest the disease. The difficulty of application of the *x*-ray to the cervix and vagina has rendered it ineffectual in malignant disease of these structures.

Pain may be a late symptom or may occur early in the disease. The deep curettage and treatment for retardation of the progress of the disease is often effective in relieving the pain. In some cases, however, one is forced to the early employment of anodynes. Opium or one of its active principles is the most effective. One must be careful not to employ doses so large in the early stage of the disease, that they will be ineffectual in the late stages. Heroin has been advocated of late. It may be used locally on tampons, or internally. The coal-tar preparations oftentimes will serve temporarily to afford relief. Belladonna, hyoscyamus, or stramonium may serve to delay the employment of stronger agents. In the later stages the hypodermic syringe will be, possibly, the only means which will give relief. The syringe should not be put in the hands of the patient.

Hemorrhage, in the later stages, from involvement of the larger vessels, may be controlled by packing with iodoform gauze dipped in a hot saturated solution of alum.

The horrible stench, in the advanced cases, may be overcome by placing the patient in a large, airy, well-ventilated room and employing two per cent thymol douches. Potassium permanganate is also effective.

The patient should be supported by nutritious food, her bowels carefully regulated, and encouraged to remain out of bed as long as possible, for after she takes to bed, her decline is rapid.

The serum treatment has not proven of benefit in the author's hands.

C. L. P.

OBSTETRICS.

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CAESARIAN SECTION FROM A MODERN STANDPOINT.

Olshausen (*Die deutsche Klinik,* XIX Lieferung, XIX Vorlesang), in an interesting paper, reports his eighty cases of Caesarian section (1887-1902). His technique in brief is as follows: After complete narcosis with chloroform and an hypodermic injection of ergotin, a median incision is made in the abdominal wall, through which the pregnant uterus is delivered. After a hasty palpation of the uterus has located the placenta, a longitudinal incision is made in the anterior wall, avoiding as far as possible the placental site. The child and placenta are immediately delivered, but the decidua is left in situ. The uterine incision is closed with a double layer of catgut sutures. The first coaptates the muscular-wall and a second continuous catgut suture rolls in the peritoneum. Olshausen has used catgut in seventy-six with no subsequent rupture of the uterus in a later pregnancy. The writer states it is well, when possible, to wait for complete dilatation of the cervix in order to avoid secondary hemorrhage. The dangers of the operation are not great with our modern ideas of asepsis. The former mortality of eighty per cent has been reduced to six or eight per cent.

The principal indication for the operation is a contracted pelvis. In eighty cases Olshausen has operated sixty-two times for contracted pelvis with a mortality of five or eight per cent. In forty-nine cases he found rachitic pelves; in four cases, symmetrically contracted pelves. Three pelves were found kyphotic and two ankylosed and obliquely contracted. A bilateral ankylosis and transverse contraction were observed in one case. Contracted pelves from an exostosis were met with in two cases and a pseudoosteomalacic pelvis in one case. The conjugata vera varied in the different pelves from five to nine centimeters (two- to three- and five-tenths inches). Children removed by Caesarian section behave as in a normal delivery. They do not commence to breathe so quickly but are not asphyxiated. They are in such a condition of apnea as exists with a fetus still in utero. With a normal head presentation, this condition of apnea is almost never noticed, for during the passage of the child's body through the parturient canal of the mother, pressure is made upon the fetal thorax and the child commences to breathe. This pressure upon the thorax does not take place in Caesarian section, hence the apnea.

Olshausen, in concluding his article, says that with respect to the operations concurrent with Caesarian section, version produces serious results for the child; that the use of the forceps upon the after-coming head gives a bad prognosis to both mother and child; that symphysiotomy should be performed only in maternity hospitals and that the Porro operation should be reserved for infected uteri.

PEDIATRICS.

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THERAPEUTIC SUGGESTIONS IN DIPHTHERIA.

Louis Fischer (*Medical News,* July 18, 1903) says the specific treatment of a case infected with diphtheria consists of giving the required dose of antitoxin, the dose depending upon the severity of the infection, the usual dose for a child from one to five years being about fifteen hundred units, and this dose repeated in from twelve to twenty-four hours if there is no amelioration of the symptoms. If the case is a severe one double this quantity should be given and repeated in twenty-four hours if no improvement is noticeable. The necessity for the third injection depends upon the pulse, temperature, condition of the glands of the neck and upon the appearance of the throat. If still no improvement is noticeable the third dose should be given. If the case is one of mixed infection with symptoms of streptococcemia we must use a potent antistreptococcus serum in addition to the antidiphtheric serum to neutralize the poison.

The indication, next to antitoxin, is for restorative treatment, and as a tissue and blood builder no medication equals food. Support the general nutrition, therefore, by proper feeding. Milk diluted with some cereal is often best borne, keeping in mind the concentrated beef, clam, chicken, or oyster broths, and scraped beef, calf's foot jelly, and ice cream for older children. When the child cannot be fed by the mouth, depend upon rectal feeding, not more than two ounces at one time, which should be injected slowly through colon tube after the colon and rectum have been cleansed by soapsuds enema. As the elimination of toxic material can only take place by means of the bowels, kidneys and skin a dose of calomel, citrate of magnesia, or a laxative mineral water will aid in the performance of these functions. The local treatment consists of cleansing the nose and throat with a dram to the pint salt solution or a one-half per cent solution of permanganate of potash in order to prevent septic material finding its way into the Eustachian tubes, which, if neglected, may lead to abscesses, mastoid involvement meningitis, et cetera.

The author recommends Lugol's solution of iodin (half strength) applied with absorbent cotton, and when there are extensive necrotic patches a steam atomizer containing a two per cent solution of sulphuric acid; inunctions of unguentum Credé into the cervical glands two or three times a day, and an ice bag worn continually when there is an extensive edema. The hygienic treatment consists of admitting fresh air, oxygen when there is the slightest evidence of cyanosis, and it is especially indicated during bronchopneumonia for the relief of dyspnea. The fever should be controlled by sponging with evaporating solutions, alcohol and water or acetic ether, cold packs or flushing of bowel with cold water, avoiding antipyretic drugs as much as possible. Stimulation should be given early on account of the depressing effect of the diphtheric poison. Strychnin, whiskey, champagne and coffee are valuable cardiac stimulants. Caffein citrate and spartein are serviceable for enfeebled heart action.

The prognosis of a case of diphtheria is certainly better when the heart has been supported until the toxemia has passed away.

OPHTHALMOLOGY.

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WHEN NOT TO PRESCRIBE CYLINDERS FOR ASTIGMATIC EYES, AND WHEN TO PRESCRIBE THEM FOR NONASTIGMATIC EYES.

N. C. STEELE (*Ophthalmic Record,* December, 1903), after stating cases of simple astigmatism of low degree, and of astigmatism of low degree combined with low spherical error requiring lenses for distant use or for both distant and near use, says that the general rule for correcting all astigmatism holds good.

The exceptions to this rule, the author states, are the cases requiring for near use lenses of rather strong spherical power and also those cases that according to the usual tests, require a spherical power combined with a cylinder axis horizontal, most of the exceptions to the general rule being presbyopes. In his reason he states:

"We know that light rays passing obliquely through a positive spherical lens are not all converged to a point. The effect is similar to light rays passing through a spherocylindrical lens held with its surface at right angles to the source of the light rays. In reading or doing other near work we nearly always look a little obliquely downward through our spectacle lenses. Hence our spherical lenses have a spherocylindrical effect producing, in this near use of them, mild artificial astigmatism.

"The light rays, passing from the printed page obliquely through a spherical lens to the eye of the reader are converged more by the vertical than by the horizontal meridian of the lens. That is, the converging power of the vertical meridian is increased, thus producing the effect of a spherocylinder with the cylinder axis horizontal. The converging effect of the horizontal meridian is neither increased nor diminished.

"In proof he holds a —1 diopter lens in a trial frame before one eye, shutting the other. Hold just in front of the trial frame a —1 diopter spherical lens and look at an astigmatic wheel card and you will see all the spokes plainly. Now begin to tilt the —1 diopter lens vertically. At once you will notice the horizontal spokes to grow dim, while the vertical ones remain plain. As soon as the horizontal spokes begin to grow dim hold a —25 diopter cylinder axis horizontal in front of the plus lens parallel with the lens in the trial frame. This at once clears the wheel. The more the plus lens is tilted the stronger must be the minus cylinder axis horizontal to neutralize the increasing converging effect of the vertical meridians of the tilted plus glass."

The practical lesson to be learned from all this is that cases with low degrees of astigmatism with the best meridial horizontal, or nearly so, should not have the astigmatism corrected, at least not fully corrected, in lenses intended for near use only, particularly in presbyopes wearing spherocylinders axis horizontal.

Doctor Steele estimates that —1 diopter spherical lens as usually worn for reading produces effect of about .13 diopter and that —3 diopter spherical produces a cylindric effect of about .25 diopter.

In prescribing, if astigmatism is low and axis horizontal omit the cylinder. If astigmatism is high decrease as above.

When in compound hypermetropes the axis of the cylinder is vertical or nearly so, the author advises increasing the correction accepted for distance in the same ratio as above.

LARYNGOLOGY.

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SINUSES OF THE NOSE.

In the September (1903) number of the *Annals of Otology, Rhinology and Laryngology* there are several valuable contributions to diseases of the accessory sinuses of the nose.

The first one, by Doctor Luc, of Paris ("My Latest Improvement in the Radical Treatment of Chronic Suppurations of the Accessory

Cavities of the Nose"), expresses an agreement with Lennoyez that the surgical treatment is to be strictly limited to the chornic forms of the disease. He also distinguishes between the true suppurative sinusitis of the antrum caused by the primitive infection of the mucous membrane, soon ending in fungous degeneration of the tissue, and the maxillary empyema in which the pus did not originate in this cavity, but simply accumulated in it, its source being either a frontal or dental abscess. The author says it is not advisable to adopt the radical operation until an attempt has been made to cure the condition by several washings-out of the cavity . He discusses the Caldwell-Luc operation. He calls attention to the weak points of the Ogston-Luc operation for frontal abscess, and cites instances where the closing of the incision at the time of operation may be followed by a recurrence. This proceeding should be reserved for the favorable cases. He has no personal record of a single case of an isolated example of ethmoidal suppuration, so he deals with this affection in connection with frontal or maxillary suppurations. He advocates the antral route for reaching the sphenoidal sinuses as disease of this sinus is usually associated with maxillary empyema.

In the same number of the *Annals,* Walter J. Freeman writes on the "Diagnosis of Nasal Sinusitis." He mentions the frequent failure of the transillumination test, and urges the necessity of perfecting and extending all other methods of examination. The narrowness of the nose frequently prevents a diagosis of sinusitis. The edema of the mucous membrane around the opening and the presence of nasal polypi should call our attention to the sinuses. Pus flowing over the posterior end of the inferior turbinal is an important diagnostic sign. In regard to disease of the ethmoid cells, he says that while acute inflammation of these sinuses is one of the commonest conditions observed during the prevalence of the grippe epidemic, he has yet to see an exception to the rule that complete resolution takes place within a few weeks under appropriate local and constitutional treatment. He does not believe that chronic suppuration of the ethmoid cells exists to the extent that certain statistics would lead us to expect. Ethmoidal suppuration is frequently diagnosed and antrum disease overlooked. He thinks that the attention is directed too much to the ethmoids. The use of suprarenal extracts is not advisable in sinus suppuration, as the blanching of the surface prevents the recognition of small amounts of secretion. The morning is favorable for detecting pus from the frontal and ethmoids; the evening for secretion from the antrum and sphenoid.

The third article in this number is by Robert C. Myles, and deals with "Sphenoidal Cells." He says: "If the method of diagnosis is adopted, which requires the condition of every part of the nasal fossæ, as well as that of every accessory sinus, should be accounted for as far as our skill and art will permit, we will have more cases of sphenoidal cells to report. When mucous is seen in the superior meatus or between the middle turbinal and the septum, the probe and cleansing swab should be used until the secrtion is traced to its origin. Sometimes it will be necessary to remove the posterior half of the middle turbinal before the proper investigations of the region can be carried out. I think we are often too conservative, when serious disease is suspected, in not removing this body earlier and more frequently." He uses a soft silver probe as an aid to diagnosis. When the diagnosis has been approximately determined one should make an opening of ten to fifteen millimeters, in the anterior superior wall, and gradually enlarge the opening downward in a vertical line keeping close to septum. A series of instruments are presented consisting of graduated drills, chisels and trephines.

A fourth article, by C. G. Coakley ("A Bony Cyst of the Antrum of Highmore") describes a case in a woman, aged twenty-nine, who, when nine or ten years old, had a swelling on the face just beneath the left side of the nose. About the same time a lump appeared on the roof of the mouth, to the left of the median line. The swelling gradually subsided after the left median incisor tooth was extracted. Two years ago she had a swelling of the anterior wall of the antrum which involved the second bicuspid tooth. In January, 1903, she had the grippe, followed by a marked swelling of the face and the hard palate. A radical operation was done and a grayish, gelatinous, polypoid mass removed. The cavity was repacked every three or four days. The author believes his case to be a cyst formed from the root sack of the left upper incisor, and that it first invaded the hard palate, pushed its way under the nasal cavity, and finally invaded the antrum. The root of the second bicuspid was probably pressed upon, its circulation interfered with and it thus diseased. The irritation from this diseased tooth produced an increase in the secretion of the sack and a considerable increase in its size. On the extraction of the tooth the cyst remained quiescent until the attack of the grippe caused such an increase in the fluid as to cause the patient to seek relief from the mechanical effect. With the entrance of pus-producing germs through the incisions about a month later, the pain, mild sepsis, and fetid discharge continued until the time of the operation.

DERMATOLOGY.

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ERYTHEMA MULTIFORME.

GERMANE to "Erythemata as Indicators of Disease," which appeared in this department last month, is an "Anomalous Case of Erythema Multiforme, with Cardiac and Renal Disease," described by Arthur Whitfield (*British Journal of Dermatology*, 1903, XV, page 273). A market-woman, aged nineteen, was admitted to the hospital on account of severe pain in the abdomen and the passage of blood per rectum. She had a tubercular family history but had been well until two years prior to admission, when she suffered from pain and swelling of legs. There was mitral incompetency with pulmonary congestion but fairly good compensation. The urine contained albumin with hyaline and granular casts and blood-cells. Her condition improved under general treatment and all symptoms of the uremic condition disappeared, when her temperature suddenly rose to 102.2° and a rash appeared on the face spreading to arms and chest.

Owing to the prevalence of smallpox and the slight resemblance of the symptoms to this disease the patient was isolated. There were papules tensely distended, vesicles and thick crusts. There was no grouping of the lesions nor tendency to peripheral extension. The temperature subsided gradually in five days, while the eruption had entirely disappeared in two weeks, leaving a few superficial pits. A successful vaccination was practiced during the attack. Three days later the temperature again rose to 102°, with the appearance on the next day of a second crop similar to the first, but much more numerous, in places, resembling confluent smallpox. In a couple of weeks the temperature and skin returned to normal. No further lesions developed, and the patient was able to leave the hospital in a fair state of health, although of course the heart and kidneys were in an irrecoverable condition.

Bacteriological examinations of the vesicular contents were made but only nonpathogenic staphylococci were found. On a histological examination of one of the lesions the epidermis was found raised *en masse* from the papillary body, and additional cavities were found in the rete mucosum. Both of these cavities were filled with coagulated serum and migratory polynuclears.

Taken as a whole, the lesions seemed to suggest the acute bullous change found in severe toxic inflammations rather than due to microorganisms.

PSYCHIATRY.

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OBSERVATIONS MADE IN THE CLINIC OF DOCTOR J. BABINSKI, PARIS.

DOCTOR CHARLES G. CHADDOCK, of Saint Louis, Missouri (*American Journal of Insanity,* October, 1903), reports the results of his observations made in 1902 and 1903 in Babinski's clinic with special reference to some new aids in the diagnosis and treatment of nervous and mental disease. He says lumbar puncture, introduced by Quincke in 1890, has made possible the examination of the cerebrospinal fluid. This operation has been done more than one thousands times in this clinic without accident of any kind attributable to it. It is followed in the majority of cases by nausea, general malaise and headache and it is advised that the patient should remain in bed several days or until the headache disappears. The daily use of lumbar puncture in diagnosis and the simultaneous study of voltaic vertigo in all patients led to the discovery of facts of both diagnostic and therapeutic value. The technique of the operation of puncture is described in the original article.

Brenner discovered the fact that when a galvanic current is made to pass through the head, an electrode on each side, subjectively a sensation of vertigo is induced and objectively the head and body incline toward the positive pole. Babinski has studied this phenomena in its variations and added many new facts of importance that render knowledge of it much more precise. His conclusion is that voltaic vertigo is due to the effect of the galvanic current on the semicircular canals and his experiments are practically definitely demonstrated by the disturbance in human beings and variations of it that follow lumbar puncture with withdrawal of a few cubic centimeters of fluid. In his published notes Babinski shows that unilateral voltaic vertigo is indicative of unilateral ear disease and that absence of voltaic vertigo indicates bilateral auricular lesion. A movement of the head backwards may replace normal voltaic vertigo with absence of subjective vertigo when both ears are diseased. In some cases a movement of rotation of the head toward the positive pole takes place. Babinski proceeds by placing a small electrode in front of the tragus on each side at the same level, increasing the current gradually from zero. The movement of vertigo appears with the current varying from one ma. to six ma. The normal combined effect of the two poles thus applied is turning of the head toward the side of the positive pole since that pole by affecting the canals on its side causes a movement in its direction and the negative pole by affecting the canals on its side causes a movement toward the opposite side.

Experience has shown that in general the causes of alteration or suppression of voltaic vertigo are to be found in auricular lesion which vary in intensity from mere mechanical interference with conduction to profound lesions of the middle or internal ear. In a case of intracranial tumor voltaic vertigo was absent and lumbar puncture revealed great increase of intracranial pressure and the withdrawal of a large amount of fluid was followed by relief of headache and immediate restoration of normal voltaic vertigo. This was repeated several times until an operation for cerebral tumor was accepted.

In other cases in which lumbar puncture was done for purposes of diagnosis if voltaic vertigo was found abnormal before operation it changed to the normal type immediately after withdrawal of a few cubic centimeters of cerebrospinal fluid and that in cases in which there was no apparent increase of intracranial pressure. In many cases with the restoration of normal voltaic vertigo after lumbar puncture a striking change was noted in previous subjective symptoms, the hearing was restored and ear noises ceased. Some cases were operated on but once and in others operation was repeated several times. In some improvement was definite and immediate, in others slight improvement gradually developed after the first operation and increased after succeeding ones to a striking and most satisfactory degree.

Doctor Chaddock cites other facts and discusses the possible methods by which these results are obtained and says that at present it would be rash to offer anything more than hypotheses in explanation of the facts. He says the practical application of Babinski's discoveries in relation to voltaic vertigo and the effect of lumbar puncture on deafness and ear noises are primarily of great value to the aurist and secondarily to the neurologist and alienist. Disturbance of voltaic vertigo is a sign of material auricular disease and may be the only objective sign but may prove of value in distinguishing hysterical deafness from that due to a material cause. Many cases of agoraphobia, claustrophobia, et cetera, are in reality cases of abortive auricular vertigo in which objective and subjective symptoms of vertigo are slight or wanting and the mental sensations of anguish prominent. The value of the examination of voltaic vertigo in such cases is evident.

In insanity with auditory hallucinations the electric examination is clearly indicated whether there be objective auricular disease or not. If a disturbance of voltaic vertigo be found, lumbar puncture is indicated. In many cases of auditory hallucinations we cannot determine positively what part is played by ear noises and possible disease of the internal ear in the genesis or continuation of auditory hallucinations; we cannot be sure that hallucinations are not illusions. With the accumulation of proof that lumbar puncture with the withdrawal of a small amount of cerebro-spinal fluid is practically a harmless procedure it may be confidently predicted that no doubtful psychiatric or neurologic diagnosis will be considered complete without such examination if there be a question of organic disease of the nervous system as there is very frequently in insanity.

THERAPEUTICS.

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THE DIAGNOSTIC AND THERAPEUTIC VALUE OF METHYLENE BLUE.

THE *Therapeutic Gazette* for January, 1904, reviews a report of Meillère concerning "The Diagnostic and Therapeutic Uses of Methylene Blue" as follows:

"Mellière states in *La Tribune Médicale* of August 22 and 29, 1903, that the manner in which methylene blue is eliminated by the kidneys affords an index to the condition of the renal and hepatic functions. If five centigrammes of this drug be injected into the tissues of a healthy individual it appears in the urine at the expiration of one-half hour. The color, at first faint and of a greenish tinge, reaches its maximum intensity by the third or fourth hour, remains the same for several hours, then gradually decreases in intensity, and disappears entirely at about the fortieth hour. Departures from the normal method of elimination, which may be classified as prolonged, delayed, rapid, and intermittent, indicate departures from health. Thus prolonged and delayed elimination points to renal impermeability; rapid eliminations give evidence of a defect of continuity in the secreting structure of the kidney; intermittent elimination shows the presence of hepatic disease or of parenchymatous nephritis. In a few instances methylene blue has been decomposed within the body and eliminated in the urine as a chromogenetic substance. This method of elimination has not yet received accurate clinical interpretation.

"Meillère reviews the therapeutics of methylene blue very fully. He believes that it possesses analgesic, antipyretic, diuretic, and cholagogue properties, and that it has proven of value in malaria, in rheumatism, in gonorrhea, and other inflammations of the genitourinary tract. Good results are claimed for it in cases of enterocolitis, when used as an enema. As a topical application it has been found useful in the treatment of inflammations of the nasopharynx, middle ear, and eyelids, and also in pruritus. Meillère states that the maximum dose for internal administration is twenty-five centigrammes (three and three-quarter grains)."

EDITORIAL COMMENT.

COMPENSATION VERSUS COMPROMISE.

SOUTHWORTH'S assertion that "You can do nothing to bring the dead to life, but you can do much to save the living from death," is particularly applicable to physicians. When reflection is accorded the legal rendering that a human life is worth from five to fifty thousand dollars, depending upon the intelligence of the jury and the calibre of the individual for whose body indemnity is being sought, the inestimable service of the medical profession to a community in prolonging life will readily be appreciated. Notwithstanding this great service the meagreness of compensation is recognized by every thoughtful physician entirely dependent upon receipts from practice to supply the ordinary necessaries of modern civilization, and the niggardly earnings become even more inadequate for this purpose when delayed settlement is subjected to the reduction effected by compromise.

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The question of compensation is suggested by an insolent resolution lately adopted by the supervisors of a neighboring county, which declares that henceforth only two dollars a visit will be allowed physicians for attending smallpox cases. The arrogance of the position assumed is equaled only by its absurdity, and the local medical society promptly resented the action by adopting a fee bill which contains a provision that smallpox cases shall not be attended for less than five dollars a visit. While this procedure would not be required under the old Roman law which failed to recognize the right of physicians and advocates to receive compensation for services, a precautionary measure is rendered necessary in this commercial era. Under the ancient régime physicians were presumed to render service for honorarium, but surgeons and apothecaries were entitled to remuneration. The honor system is, however, now practically superseded by the spoils system and hence physicians are forced to infuse business principles into medical practice. Doctors have so long been careless about this matter that some people actually regard the profession an eleemosynary occupation. Think of a two-dollar fee for visiting a person afflicted with smallpox! This amount should be the minimum charge for calls to ordinary cases. As an esteemed contemporary remarks, "Even the most ignorant veterinary surgeon charges two dollars for visiting a sick horse, cow, or dog, and has no difficulty in securing such a fee, yet the man who pays the veterinary surgeon two dollars a visit for attending his sick dog has learned to expect a bill of but one dollar for visiting his sick child, simply because the attending physician has never valued his services sufficiently to charge more." Physicians themselves are responsible for the inadequate fees they receive, and must cease working for nothing before the laity will accord the service intrinsic value commensurate with scientific attainment. According to report the gratuitous service rendered to one Philadelphia hospital last year amounted to over five hundred thousand dollars at the ordinary low-water-mark fees. Consider now the large number of hospitals throughout the country and then estimate, if you can, the aggregate sum in gratuitous service donated by physicians during the past quarter century even. Granting that one-half the ministration was dispensed to the deserving indigent there would still remain a bill of unpaid fees enormous to contemplate. An authentic story comes from a Canadian town that physicians are insuring medical attendance to members of certain lodges for fifteen cents a month. Another lamentable tale, which emanates from the same source, recounts the fact that a newly-organized lodge approached three physicians to obtain bids for supplying medical attendance to members. The three doctors met in solemn conclave, discussed the matter, and adopted a common fee. Notwithstanding the compact of the trio, one offered his services to the lodge at the price agreed upon; another shaved the figure a bit thinking that he might thereby secure a leverage on the contract; while the third counted on a friend at court to prepare a blank tender at the proper time and thus cinch the practice for him. Such tactics are not calculated to increase popular respect for the profession, and doctors should not entertain grievances against the laity on account of insufficient compensation while manifesting such utter disregard for the proper estimate of medical service themselves. The average person considers lightly that which is procured cheaply.

* * *

The question of compromise in order to recover fees has recently been very forcibly demonstrated in this vicinity. A physician who had treated smallpox patients in the country presented a claim for services to that august body known as the board of supervisors. The fees aggregated over seventeen hundred dollars, and the committee upon which devolved the duty of considering the equity of the amount reported the recommendation that about nine hundred dollars be allowed. Mandamus proceedings were instituted to compel payment of the entire claim, but the court ruled that the county was not liable and that plaintiff's only legal recourse was to proceed against the township in which the patinets were treated. The case remains *in statu quo*. This instance is cited as an example of similar ones in which recourse to legal proceedings has been rendered necessary. The Stemen episode in Indiana is one in point. Plaintiff performed an operation for appendicitis on the daughter of a wealthy father and charged the moderate fee of five hundred dollars, which defendant refused to pay. Notwithstanding the fact that the trial disclosed the ability of the man to meet the obligation and the accustomed charge of plaintiff to be from five hundred to one thousand dollars, the jury awarded only three hundred and fifty dollars for surgical service and after treatment. The gratitude of the multimillionaire senator of Washington who summoned a Philadelphia surgeon of national repute to his bedside and consented to an operation in the hope that his life might be saved is likewise worthy of note. The surgeon rendered a bill for twenty thousand dollars which the senator refused to honor. When told that if circumstances would not permit liquidation of the amount specified he might send a check for what he considered the attention worth. His valuation of the medical service was five thousand dollars, but the legal service of drawing his last will and testament was not submitted to his arbitrament and consequently he paid ten thousand dollars for this job. The Fair case serves another lesson. The physicians who ministered to this millionaire during his long and last illness presented a bill for thirty thousand dollars, which was objected to by the relatives as excessive. The objection was sustained by the press, the public, and the courts, but not a murmur was heard when the lawyers presented a claim of one hundred thousand dollars for settling the estate, although the skill of the former contemplated saving a life while that of the latter was directed toward severing a legacy.

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The inference drawn from these observations would seem to indicate that there is "something rotten in Denmark." Cheap doctors, cheap fees, and cheap journals are cankers retarding the progress and unity of professional interest. Because of these obstacles proper compensation for service is difficult to obtain, and recourse to legal process frequently results in miserly compromise. A Philadelphia judge is quoted as saying that "The life of a rich man is worth more than the life of a poor man, and the physician has a right to charge the millionaire more for his services than he does the laborer. The physician is unlike the merchant, who has goods of different quality to sell at various prices. He must give his best service in every case. Human life has a pecuniary value of variable quality, greater in the millionaire than in the laborer. Thus, the practitioner of common sense has a maximum and a minimum charge, and makes out his bills to suit the pecuniary circumstances of his patients." In contrast with this opinion is that of the Detroit judge who recently charged the jury, in a suit instituted by Obetz to recover professional fees, that "One important thing to be taken into consideration is that in the last few years antiseptic methods have greatly decreased the difficulties and dangers surrounding surgical operations and consequently the value of such services has decreased." Thus it will be seen that the judicial equation determines in great measure the justice dispensed to the physician who seeks to recover fees by legal process. What, then, is the agency that will place the practice of medicine on a firm financial basis and wield a power sufficient to maintain its dignity and rights before civilian and court? Organization would seem to offer a solution of the problem. Organization is the watchword of the age, and physicians should avail themselves of its advantages. According to the secretary of the national medical association there are still about seventy-five thousand physicians in the United States who are not identified with county, state, or national medical society. Organized physicians cannot accomplish much in the way of maintaining fees or collecting debts while the majority remain unorganized. Affiliate, then, with your local society to further personal interest by social contact and the absorption of progressive ideas. Affiliate with your state society to advance medical legislation and thereby engender greater professional esteem. Affiliate with your national organization and "Behold how good and how seemly it is for brethren to dwell together in unity."

MEDICAL NEWS.

OVER FIFTY YEARS A PHYSICIAN.

Doctor Edmund Andrews, of Chicago, died January 22, aged eighty years. Death occurred as the result of an operation for stone in the bladder, recovery being precluded by an enfeebled condition incident to old age. The doctor was a native of Vermont, but while still a boy his parents moved to Michigan, where young Andrews received his classical and professional education, graduating from the University of Michigan with the literary class of 1849 and the medical class of 1852. For a time he was connected with the teaching force of his alma mater, being the first demonstrator of anatomy in the medical department, but the possibilities which Chicago offered induced him to locate in that city, where he achieved pronounced success. For three years he filled a professorial chair in Rush Medical College, after which, in connection with others, he founded the Chicago Medical College. He taught and practiced surgery in the Windy City for forty-eight years.

During the Civil War he rendered excellent service as surgeon in the Union army, and while a resident of Michigan he founded the *Peninsular Medical Journal.* In 1854 he founded the Chicago Academy of Science, and invariably lent his labors to promote its success.

MINOR INTELLIGENCE.

THE French soldier is said to be unusually prone to appendicitis. In the year 1901, four hundred ninety-one cases, or ninety-five per one thousand of the enlisted force, were reported.

THE next meeting of the Mississippi Valley Medical Association will be held in Cincinnati, Ohio, on October 11, 12, and 13, 1904. This place was decided upon at a recent meeting of the committee.

AMONG the large number of "quack" doctors registered in Germany's capital, fourteen and four-tenths per cent of the women and twenty-nine per cent of the men are said to have criminal records.

DOCTOR NICHOLAS SENN, of Chicago, who contracted blood poisoning while performing an operation, and whose condition at one stage of his illness was considered alarming, is reported to be rapidly recovering.

THE Western Reserve University has received a gift of $100,000 from a donor whose name has not been made public. The income from the amount will be devoted to promoting instruction and research in anatomy.

THE Tuberculosis Commission of Maryland contemplates conducting a Tuberculosis Exposition next year. All phases of the disease will be taught, and apparatus and means for the prevention and treatment thereof will be demonstrated.

PHILADELPHIA is about to appoint fifty medical inspectors at a salary of $1,200 per year. The duties of these officers will be to inspect schools, order vaccinations, direct fumigations, and have general supervision of the health of the city.

SOME late discoveries indicate that the art of dentistry was practiced at a very early period. During recent excavations in Rome several bodies were unearthed, and examination of the mouth of one, a woman, revealed a perfect set of gold teeth.

THE citizens of New Orleans recently completed arrangements for the establishment of a Pasteur Institute in connection with Charity Hospital. Residents of the Crescent City and vicinity, who are unfortunate enough to contract hydrophobia, will be treated without charge.

DOCTOR J. C. CULBERTSON, who has for the past thirty years been editor and publisher of the *Cincinnati Lancet-Clinic,* retired from the editorship of that publication with the issue for December, 1903. Doctor Culbertson still retains financial management of the journal but the position of editor-in-chief has been assumed by Doctor Mark A. Brown, who is supported by a corps of collaborators.

The feat of having reached the highest point in mountain climbing must be accorded to a physician. In June, 1903, Doctor William Hunter Workman succeeded in climbing the Himalayas to a height of 23,394 feet. Mrs. Workman, who was a companion to her husband in his perilous undertaking, succeeded in attaining a height of 23,267 feet, which is the greatest point any woman has reached.

RECENT LITERATURE.

REVIEWS.

A NEW CLINICAL CHART.*

"So many men, so many charts" is as true as most aphorisms. This one has a number of points of advantage for those who use large charts. It is made for two hourly observations, and has space on one sheet for ten days. The time from 6 P. M. to 6 A. M. is tinted in pale pink (or green, as the buyer wishes), making the reading of the curve very easy. It is arranged so that the pulse and respiration may be recorded either graphically, or in figures. There are spaces for stools, urine, dates and days of disease, besides abundant room for the personal data, diagnosis, treatment, termination, and for daily notes. Anything that assists and favors care and accuracy in clinical records, either in hospital or private practice, should be welcomed by physicians, and those who are looking for a chart different from those now in use are warmly advised to examine this one.

*Designed by R. S. Morris, M. D. Copyrighted and published by George Wahr, Ann Arbor, Michigan.

GYNECOLOGICAL DIAGNOSIS.*

The book before us is a new departure in gynecological literature. Text-books on gynecology we have in plenty and diagnosis therein is considered briefly or at length according to the predilection of the author, but in the volume under consideration, the value of the work must depend upon the thoroughness with which the author has worked out and laid before the reader the various factors essential to a correct and accurate diagnosis, an ambitious task at the best and one not to be undertaken too hastily. The book is divided into two parts, the first portion being devoted to general and the second to special diagnosis. One hundred pages, or a fifth of the book, is devoted to the consideration of rather elementary facts, such as the clinical history and the different methods of physical examination and exploration of the pelvis. It would seem as if too much space had been devoted to the description of instruments, space which could have been much better employed in the later portions of the work, where important subjects receive rather scant attention. One can hardly see the necessity of a whole page being devoted to the representation of a woman in the erect posture for examination without any explanation of how such an examination should be made. Figure 8 incorrectly represents the Sim's position, and could have been used better to illustrate the errors into which the examiner is liable to fall in attempting to place a patient in this position. The second part of the book, devoted to special diagnosis, is perhaps a greater success than is the first, although some subjects have received more consideration than their importance warrants and vice versa. For instance, twenty pages are devoted to the consideration of the diagnosis of hydatiform mole, while the subject of cancer of the vulva is dismissed with a page and a half. Peaslee's plan of parallel columns of symptoms and signs as aids to diagnosis has been adopted for the differential diagnosis of some diseases. These columns are usually skipped by the reader but are of value to the teacher and for reference. A great portion of the text is evidently digested material from the special works mentioned in the preface. The illustrations are rather too profuse, but on the whole are satisfactory and well executed. The book may be considered creditable to its author and will prove a guide to the student and practitioner, if not to the specialist.

*By Palmer Findley, M. D., Chicago. Published by Lea Brothers & Company, Philadelphia and New York, 1903.

THE PSYCHOLOGY OF CHILD DEVELOPMENT.*

THE former basis of investigation for child-study was the assumption that child-psychology was simply adult psychology reduced to lowest terms. Mr. King develops the idea that the study of the child's mind should be carried on from a different point of departure. The object of the new method of investigation should be to find out how and under what circumstances the mental processes arise, and what they mean to the *child*, not to what they are analogous in the adult mind. Above all, the investigator must appreciate these processes, not by themselves, but by their place and value in the entire conscious life. The author from this new point of view sketches the process of mental growth in children, with special reference to their development during the school years. This he deduces from their interests in books and games during that period. No new material is presented, but rather an outline of a functional interpretation of the well-known facts of child life, showing what the multitude of observations of child-psychology can mean.

*The Psychology of Child Development, by Irving King, with an introduction by John Dewey. Two hundred eighty pages, cloth, 12mo, net $1.00; postpaid, $1.10. The University of Chicago Press, Chicago, Illinois.

G. E. FROTHINGHAM, M. D.

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ORIGINAL ARTICLES.

MEMOIRS.

DOCTOR GEORGE EDWARD FROTHINGHAM.*

By FLEMMING CARROW, A. M., M. D., ANN ARBOR, MICHIGAN.

PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN THE UNIVERSITY OF MICHIGAN.

THIS day has been set apart as a memorial day—an occasion when we may meet as a department, faculty and students—to call to mind the work done by men, who, "having gone before," have left us the rich heritage of their ripened experience, and the benefits which come through the results of their labor. While it would have been easy for this faculty to have selected from their number one who, having had a longer personal acquaintance with the subject of my remarks, could therefore have given a closer history of his life and work—I challenge it to have selected one who would undertake the duty more cheerfully.

Now there can be no doubt that those who labored in the medical department of this University in its earlier days, gave force and direction to the creation of more thorough and systematic medical study, and we now are enjoying the reward of their thought and labor. As we trace their steps toward a better order of things we feel that the position our school occupies today is but the logical outcome of their endeavor. The promise of better things which they indulged has been achieved, and as honor belongs to the first suggestion of a discovery or improvement, we meet tonight to do honor to the memory of the man by whose energy the chair of Ophthalmology was first added to the regular curriculum of this University.

This important branch of surgery had been taught by the general surgeon, and but little attention was given it during the ordinary course of medical study except as a clinical branch. Doctor Williams, however, recognized its importance and had it established as a separate chair in the Miami Medical College in 1860. Doctor C. R. Agnew, of New York, following his lead, established a similar chair in the College of Physicians and Surgeons of New York in 1869, and Doctor George E.

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*A memorial address delivered on Founders' Day at the University of Michigan.

Frothingham, the subject of this sketch, saw the importance of the movement, and in 1870 induced the Board of Regents to establish a similar chair in this University. Not only did he demonstrate the necessity for this chair, but he clearly showed his ability to fill it. The wisdom of the Regents has been proven and Doctor Frothingham's foresight rewarded by the popularity of this department, the clinics of which are the most numerously attended of any similar clinic west of Philadelphia. The students' time for their junior and senior years is occupied by Ophthalmology for twenty-one hours each week of the college year, and the fact that they are able to engage in Ophthalmological work in their general practice gives evidence of the wisdom of the movement inaugurated by Doctor Frothingham.

George E. Frothingham was born in Boston in 1836 and was educated at Andover Academy. Doctor Samuel Taylor, a prominent educator, wrote in most flattering terms of the ability of his young student, and it was at this time that he made his first literary effort in an article on "The True Love of Martial Glory," which appeared in the *Mirror* newspaper. Completing his academic course, Doctor Frothingham taught in some of the New England schools for a few years, before beginning the study of medicine with Doctor William Warren Green, an eminent Boston surgeon. While studying medicine in Doctor Green's office he was married to Miss Lucy Barbour, of Gray, Massachusetts. He came to the University of Michigan and completed his medical course in 1864, and shortly afterwards settled in North Becket, Massachusetts, and engaged in the practice of general medicine. In this general practice he laid the foundation of an excellent judgment and keen insight into disease so necessary to the making of a successful specialist. I may here say that nearly every man who has distinguished himself in any of the important specialties has at the beginning of his career been in general practice. Here he has opportunities for broad observation at the bedside upon which is built the superstructure of intelligent special practice. There is a constantly increasing demand for more learning of a general character in the so-called special branches of the profession, and we are constantly increasing our requirements in response to this demand. None knew this better than Doctor Frothingham, and it was the occasion of the progressive steps he took toward the practice of Ophthalmology.

Doctor William Warren Green, his old preceptor, was called to this University in 1867 and brought with him young Frothingham as his prosector, who was at the same time made demonstrator of anatomy.

There was no effective law in this state at the time, for supplying material for the dissecting room, and the demonstrator of anatomy was compelled to obtain his material from various sources, nearly all of which were repugnant to Doctor Frothingham, as well as insufficient for his purposes. He began at once to set in motion such machinery as would give to him dissecting material without having to procure it through agents in this and adjoining states. It was his desire to have the Legislature of the state enact such laws as would bring to his laboratory unclaimed material which had heretofore been beyond his reach, so that the supply would be legally furnished from a class who, dying without near relatives, could be had with the least violation to the feelings of friends. Toward this end he labored for several years, but met with scant sympathy from legislative committees, until during Governor Croswell's administration he secured the privilege of presenting the necessity of such a law to a meeting of the two houses at an evening session.

I am obliged to borrow very liberally from various sources the material which I am presenting, but all are agreed that he presented this matter in such a manner as to arouse the interest of the Governor and Legislature, and that the law which was enacted some time afterward, through the operation of which we now get our anatomical material, was largely the result of Doctor Frothingham's endeavor on this occasion.

Mr. Begole, who succeeded Governor Croswell, attempted to secure a repeal of this law in his message to the Legislature, and to this message Doctor Frothingham uttered a vigorous reply. He reminded him "that we must be separated from our dead—their spirit is gone—and in the usual disposition of the body it is separated atom from atom to grow in the blades of grass, in the nodding flowers, the fruits of trees, and that it assists in supplying the wants and contributes to the happiness of the living; and he who would find consolation for the departure of the spirit should be reconciled to any disposition of the body which would benefit mankind.

"From whatever source our horror of dissection had its origin it was not from a study of nature or a contemplation of the dealings of God with man, nor is this superstitious dread of dissection, or prejudiced opposition to it, any evidence of piety or humanity. On the contrary it is an evidence of barbarism and cruelty well exemplified by the character of the Roman people, who so delighted in the flow of blood, that exhibitions of human butchery constituted their daily diversion, and yet, with such horror did they regard dissection that it was a crime to examine the anatomy of the human body, even those that had been dragged from the arena and abandoned to the birds of prey. No anatomist arose from their number—not a single human skeleton could be found in Rome. Even Galen had to send his students to Alexandria to study the skeleton. If a physician desired to dissect any part of the human body he had to steal that which had been thrown to the vultures and carry it off in the night. Nor did the students at Alexandria long enjoy these humane pursuits that fitted them to succor the distressed. The beneficent laws instituted under Ptolemy Philadelphus were abolished by Roman denominations just as Governor Begole threatened to do in this state then governed by Democrat-"Greenback Rule."

If there is one trait in Doctor Frothingham's character which stands out more prominently than another, it is in his assertion of what he considers to be right, regardless of consequences. He never truckeled; indeed his writing and his speech gave strong evidence of a strong nature, a man who was ready to meet the world both professionally and in business, and who was prepared to win his place in it.

At another point in this argument, which the older practitioners of this state remember so well, he replied to Governor Begole's message to repeal the anatomical supply law, as follows:

"How shall we obtain a knowledge of anatomy?" asked a physician of an officer who had denied him the body of a criminal. "Oh, dissect your friends," was the reply. "So I will," said the physician, "when I practice and bestow my skill only on my friends. I will deem it a beneficent duty to dissect a dead friend to get the knowledge to relieve the sufferings of a living one, but remember, when asked to relieve one of your friends or one of your children by knowledge only to be obtained by dissection, I have a right to ask for the bodies of your dead friends and children for that purpose. You have no right to confine my dissections to the bodies of my personal friends unless I confine my ministrations to them also."

He asked Governor Begole further in the argument three questions:

(1) Are dissections necessary to acquire knowledge to relieve suffering and preserve life?

(2) What bodies may be taken for the purpose with least violation of the feelings of the living? and

(3) What is the duty of the state in the matter?

The answers to these questions he gives himself. He says: "No intelligent person at the present day will deny the necessity of a knowledge of practical anatomy on the part of a physician, or will deny that a lamentable ignorance of it impairs the efficacy of many medical men to act in many emergencies that arise in practice and involve the question of life and happiness. Doctor Thomas tells us that before understanding one of his brilliant operations whereby a young mother was saved from an inevitable death and restored in health to her husband and child, that he thought he would first make incisions upon a single cadaver, feeling sure that he could then make them with accuracy upon the patient. 'The difficulties which I met with in this attempt,' said the doctor, 'induced me to practice the procedure upon seven dead bodies before I felt willing to attempt it upon the living.' Is he then a humanitarian who, out of regard to a false sentiment against dissection, would deny to those suffering from many ailments the only hope of relief? Would he not rather seek to compel physicians to cultivate this skill by dissectiong dead bodies before attempting to operate upon the living? Would he not also attempt to supply them with the material? Which is the true humanity, he asks, that which would utilize the dead or that which would sacrifice the living?"

The second question I answer in Doctor Frothingham's words that you may know the staunch advocate this department had in its struggle toward that free dissection which you now enjoy.

"In strict logic no class of people who avail themselves of the benefits derived from dissection can refuse their bodies for this purpose when required. Men who submit their bodies to the knife when living ought not to be made miserable at the prospect of its occurence after death. Nor should men who stand by their friends and urge them to submit to amputation and other operations, be horrified at the thought that the knife should enter their flesh when the muscles have ceased to quiver and the nerves ceased to feel.

"Now what is the duty of the state in this matter?" he asks Governor Begole. "It is the duty of the state to protect the lives of its citizens. It has the right to sacrifice the feelings and interests of the few for the good of the many. It levies taxes and orders drafts in time of war and sends men to face danger and death, to preserve the state from destruction and the homes of the people from invasion. It is the duty of the state to protect, so far as it can, its people from invasion of disease, and to afford every facility for acquiring necessary knowledge for that purpose. Among these means of acquiring necessary knowledge the dissection of dead bodies is recognized.

"The laws of the state demand a knowledge of practical anatomy on the part of the physician. If in an operation a patient is killed by reason of his ignorance of anatomy and consequent want of skill, the physician may be convicted of manslaughter and punished by imprisonment. Through all these years, until the act of the last Legislature, this state has presented the anomaly of exacting under penalty, a practical knowledge of anatomy, and at the same time making it a crime to obtain the means to acquire that knowledge. Physicians have in this respect been subjected to an injustice and oppression that no other class of people were ever asked to submit to. Through all these years physicians have pursued their calling quietly submitting to this injustice, risking their lives and liberty to secure the means to qualify themselves for the duties of their calling."

By such arguments did Doctor Frothingham prevent a repeal of our anatomical law and enforce its importance and justice upon the attention of the Legislature. The history of Doctor Frothingham's endeavor in this direction is the history of the success of the legislative enactment which secures to us the material for our anatomical laboratory from the various county houses in the state and from other sources whenever a body is unclaimed. It has removed the dread of prosecution under which demonstrators of anatomy constantly lived prior to the passage of the law and has made of dissection and the obtaining of material for that purpose a lawful and dignified procedure.

If this were the only service Doctor Frothingham rendered the University it would be his debtor, but he vigorously defended the principle of state education in medicine.

"It is objected," say he, "that teaching medicine is teaching a profession, and that the state has no more right to prepare men for the medical profession, than to prepare them for other trades; that the state should teach a man the carpenter trade, should he desire it, on the same principle. Well, this is what we understand the state does do, practically, when it teaches the principles of mechanics and the other sciences that underlie the practice of all the arts and trades. If we exclude medicine where shall we stop? Shall the state teach astronomy and fit men for positions as astronomers? Shall it teach engineering and surveying? Shall it teach arithmetic and book-keeping and fit men for accountants? Shall it teach men writing and fit them for copyists and clerks? Shall it teach the arts of spelling, punctuation and the use of capitals and thus fit one for the position of proof-reader? It is claimed that these are rudiments of knowledge of daily use in every calling of life. Is there any knowledge more necessary, or more frequently needed for use in every calling of life than those medical sciences which make us acquainted with the laws by which we live and move and have our being?"

By the force of his argument—by the energy of his personality, and by the high character of his attainments those in the state who were interested in educational matters, were made to see not only the necessity of state aid in acquiring a medical education, but the justice and eminent fitness of such a position on the part of the University.

In 1875 Doctor Frothingham was made Professor of Practical Anatomy and Ophthalmic and Aural Surgery. He had been but Lecturer on these subjects before, and it was while serving in this capacity that he exposed and ligated the common carotid artery for an injury of that vessel, an operation for which he received great credit from Doctor Van Buren in his "Monograph on the Treatment of Aneurism." In 1876 he was relieved of duty in the anatomical department and transferred to the department of materia medica in conjunction with Ophthalmology and Aural Surgery. Such versatility surprises us in these days, but it shows us the capabilities of this strong man. Doctor Frothingham taught these branches until he resigned from the University in 1889, when he removed to Detroit, where he practiced his chosen branch of surgery until his death in 1902.

He thus covered a period of twenty-two years as a teacher in this medical school, and was one of the number who helped its advance, and in troublous times, too, for medical college advancement, and when he left it he had the pleasure of seeing it in the forefront of medical institutions in this country.

Judge if you please of his fitness as an instructor when I tell you, that amongst his pupils were men who have since made their names known where even all that is best in medical science is understood: Herdman, Mayo, Novy, Huber, and our beloved Dean Vaughan. He was a strong advocate of a thorough foundation in the fundamental branches of a medical education. He excited the students' enthusiasm and exhorted them to the attainment of higher things in medical study.

In his lectures he sometimes rose to heights of eloquence and imagery in which he carried his pupils out of the dingy surroundings of the clinical amphitheatre, and gave them a sight of the beauties of elegant diction and lofty thought and purpose. Who can measure the value of such a man, for he does more than give the dry husks of stubborn scientific facts, he instils a thirst for broader culture and helps toward the formation of higher ideals. It is due to such teaching that the graduates of this department have gone forth grounded in the principles which enable them to solve the problems presented in active practice and become eminent wherever they have located. The most flattering tributes have been paid to the qualifications of our students because they are taught, not medicine only, but all those attributes which go to the making of an all-around physician. Doctor Frothingham has not only served the medical department of this University faithfully and efficiently as a teacher, and added to its reputation by his ability and justly deserved eminence, but he was always ready to defend it whenever it needed a champion.

He had little time for literary work, still his pen was not idle. He made numerous contributions to various medical journals and his published lectures are masterpieces in their line. He helped edit the *Michigan University Medical Journal* and wrote many of its editorials. He was also editor and proprietor of the *Ann Arbor Register,* a paper of influence in this state. Thus he found time during a busy life as a general practitioner in this city, and a teacher in this University, for other things than those strictly medical.

In business he was that rare combination—a good business man and a good physician, and in consequence he accumulated a competency. Now, I am aware that a good deal is said nowadays about the "Heaven-born mission of medicine," and that the laity have been allowed to think of the physician as one whose office it is to give and not receive—that the spirit of commercialism should never enter the field of science nor exact tribute for ministering to the necessities of the sick. Much of this teaching I am sorry to say has come from the members of the profession, but I desire to tell you—and I speak to medical students—that you fall far short of your whole duty to your profession, if you continue to promulgate this doctrine. The laborer is worthy of his hire, and there is nothing incompatible in entertaining high scientific ideals, and a truly generous spirit, and having the thought constantly before your minds that it is your bounden duty to regard the future comfort and welfare of your family. Physicians have always ministered to the necessities of the poor without thought of recompense. They have always visited the free wards of the hospital, regardless of their comfort and pleasure. They have spent a large portion of their time in the loathsome wards of the infectious lazar house, taking in with every breath, contagion, from which they oftentimes never recover, so that they certainly have a right to demand from the rich a just recompense for their services, and the man who does not insist upon it not only lives regardless of his duty to himself and those dependent upon him, but is a stumbling block to his brethren in the profession. A consideration, therefore, of the commercial side of his practice, is entirely consistent with his vocation in its scientific aspect.

Doctor Frothingham was essentially aggressive in character and yet he had the warmest regard for those who had known his principles and his work. "This is because the world loves a man—it holds a pretender in supreme contempt, but, when a man of intelligence and culture follows the lead of his convictions, those who mercenarily antagonize his work secretly applaud the attributes of strength which he manifests." Doctor Frothingham's work was guided by a conscientious effort to do it well. He never dodged or compromised with his sense of duty. In practice he was honest, sincere, painstaking, practical, and absolutely devoted to his patients. This devotedness took the shape of a personal and fatherly interest. Each case was made to feel that it was the only one he had at the time and that it was receiving his entire attention. In consequence every patient became his friend. He was the wise and trusted counsellor in health, and the loadstar of hope in sickness. With these qualities it is no wonder he succeeded. He succeeded, too, because he was shrewd, and he had the confidence of the people of this community because he deserved it. His life is a record of thrift, integrity, and manliness, and, let me say, it is a solemn thing to lead such a life. Its example leaves a good and lasting impression. Such an influence as he exerted cannot come from intellect alone, nor from mere shrewdness in business, but must rest upon high moral qualities. These Doctor Frothingham possessed to an unusual degree. Others saw that he had a desire to do justice, and this disposition was shown on all occasions. He was a man of uncommon good judgment. He possessed that invaluable quality called common sense, and he reached the truth of any question which engaged him, with an almost unerring instinct.

Doctor Frothingham attained high rank and a position of commanding influence in his profession in this state. He was elected President of the Michigan State Medical Society, the highest position a medical man can occupy in the state, and he presided over that body with dignity and honor.

From what has been said you will agree that we are recalling the life and achievements of no ordinary man. This department cannot put him away in silence. The memory of the elements within him, and the good deeds he has done, impells us to testify to the cordial relations we bore him. There were no secrets in his life—no hidden record which he feared to bring to the light, and it is a happiness that we can speak without reserve and with pleasure, of his character and conduct. But there is yet another side to the life of this man. He was a good friend, loyal, generous, and helpful, and in his family, where he was best known, he was best beloved, holding the unswerving affection of those nearest him.

Finally, I can think of no juster tribute than to say, that in this man there was developed those qualities which are summarized in the word manhood—for this word includes every sweet and attractive feature in the life of a man. It signifies all that a man ought to be in this world, and it means also more than that, the one possession which he can carry out of this world into the next—a possession which I believe will be the foundation of a new career in a new life. It is a possession which inspires respect and admiration in enduring form. It signifies character and all that character implies.

Thus he lived in this community and he worked in it. He stood at the bedside of many of our citizens and fought death with manly vigor, and when it came his time to succumb, "He departed, and took a man's life along with him."

RESECTION OF THE NASAL SEPTUM FOR CORRECTION OF DEFLECTIONS.*

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THE numerous operations devised, and the many methods proposed for the correction of septal deflections, prove that there exists much difference of opinion among rhinologists as to the best method to adopt for the correction of this abnormality. With this wide difference of opinion one ought not to be dogmatic in insisting upon any arbitrary rule for guidance in all cases. Individual preferences, and technical skill, as well as the peculiarities of each case must necessarily be guides in selecting the operation best adapted for a given patient. The operator ought to adopt the method that will give the best results with the least pain, danger and inconvenience to the patient. At the same time he ought to recognize his own limitations and to select an operation that he can perform skillfully. Many of the operations which are in vogue are only adapted for the correction of deflections of the cartilaginous septum, and when modified to correct bony deflections accomplish it by crushing, or fracturing the septum, then forcing it into the median plane, and holding it there until it unites in its new position. No one can deny that good results follow these methods in many cases, but the operation is formidable, not free from danger, the after treatment is long and painful, the patient has to give up his routine duties for a number of days, and the final result is often disappointing. Most of the deflections which the rhinologists are called upon to correct involve more or less of the bony septum, and unless corrected the result will be only partially successful.

I wish to call attention to the operation of resection of the deflected portion of the septum as an eminently surgical procedure, and one that gives very satisfactory results. This operation was not created in a day by a single surgeon but has been a growth. With it a number of names are closely linked. Credit is given to Ingals, of Chicago, for having first resected a portion of the septum in 1882. He makes an incision over the convexity of the deviation and dissects off the mucous membrane, exposing the underlying cartilage. A triangular piece, with its base towards the floor of the nose, is then removed, care being taken not to injure the mucous membrane of the other side. The mucous flaps are then brought together and held by a stitch, and the nose is packed. In this operation only a portion of the deflected cartilage is removed. In 1882 and 1883 Hartman and Peterson recommended the resection of the septum. Krieg, in 1886, published his method of resection, which differs from Ingals' in that he removes the entire deflected portion of cartilage. Boenninghaus advocated the continuing of the resection backward into the bony portion of the septum when necessary. Freer, of Chicago, without the knowledge of Krieg's or Boenninghaus' operations commenced in May, 1901, to remove by resection the cartilaginous portion of the septum as far back as was necessary. The writer has made, for a number of years in suitable cases, flaps of mucous membrane on the convex side, and resected a portion of the cartilage, following more or less closely the Ingals operation, but it was not until the publication of Doctor Freer's article in the *Journal of the American Medical Association*, March 8, 1902, that the possibilities of the operation were realized. The writer feels an indebtedness to Doctor Freer for the careful manner in which he has worked out this difficult operation, and for his instruments, which makes the operation easier and more satisfactory. The steps of the operation, abbreviated from the description given by Doctor Freer in the above journal, December 5, 1903, are as follows:

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*Read before the WAYNE COUNTY (Detroit) MEDICAL SOCIETY.

After the thorough cleansing of the nostrils and the application of cocain and adrenalin, a vertical incision through the mucous membrane is made over the point of the greatest convexity. A horizontal incision is next made commencing behind the vertical incision and joining it at its lower end. This incision is continued forward beyond the beginning of the deflection. The two incisions form an inverted T. This allows an anterior and posterior flap to be made by separating the mucous membrane from the underlying cartilage. Usually this can be accomplished by blunt dissection, but if adherent it may be necessary to use a thin, paddle-shaped knife bent at an angle. After the flaps have been retracted and the cartilage exposed, an incision is made through the cartilage in front of the deflection, care being taken not to pierce the mucous membrane over the concave side. A blunt dental spatula is now inserted through the slit and the mucous membrane is separated from the concave side. If this is done carefully the mucous membrane can be separated without perforating it. After both surfaces of the cartilage are freed from the mucous membrane, an Ingals cartilage knife is inserted through the incision in the cartilage, its point turned away from the mucous membrane and a horizontal incision is made through the cartilage from behind forward to join the forward incision. In a similar manner with a specially shaped knife the posterior and upper portion is incised. An irregular triangular piece of cartilage is removed. The posterior edge of the cartilage can now be easily seen, and if some of the deflected portion still remains it can be removed piece by piece with a Gruenwald forceps. It may be necessary to extend even into the bony septum before the deflection is corrected. The flaps are now replaced, the two mucous surfaces are in apposition, the concavity is effaced, the septum is perpendicular and the breathing space free through the formerly obstructed side. Both nostrils should be packed with strips of lint impregnated with subnitrate of bismuth. The formerly obstructed side should be packed fairly firmly and the other side loosely. A portion of the lint may be removed daily from the obstructed side, the whole being removed in from three to five days. On the other side it is usually not necessary to leave the packing in for more than twenty-four hours. After the packing is all removed the only treatment necessary is simple cleansing of the nose followed by an oil spray, such as menthol, three per cent in oil.

The advantages of this operation over many others are numerous. It allows the corrections of deflections that extend into the bony septum, and can be adapted to irregular septa that do not conform to any definite type. The deflected portion is removed so that there is no possibility of it again becoming deflected. The danger of perforation, after one becomes experienced, is no greater than in other operations upon the septum. The after treatment is much shorter and simpler. It is necessary in the Asch operation to have the patient wear a tube in one or both nostrils for from four to six weeks. This is annoying and painful. It is also necessary in the Asch operation to give a general anesthetic and to confine the patient in bed for a few days. The resection operation can be done under cocain anesthesia without pain, except perhaps when it is necessary to continue the removal into the bony septum. Even then the pain is no more than can be borne by one of ordinary fortitude. The operation does not confine the patient in bed. As long as the packing is in the nose some inconvenience will be felt. I usually advise my patients to keep quiet for two or three days. They are always able to report daily at my office. It is true that resection is a tedious operation as compared with many others, also that considerable experience is necessary in order to operate quickly and skilfully, but the shortened after treatment, the freedom from annoyance after the first few days, the possibility of attending to one's routine duties and finally the uniformly successful and permanent result more than outweigh the tediousness of the operation.

The following cases are reported, with brief histories:

Case I.—B. S., male, aged fifteen, consulted me November 2, 1902, for nasal obstruction due to injury received about four months ago. Cartilage and anterior portion of bone deviated to left, entirely occluding the nostril. Bony deviation to right about two-thirds back. I resected the cartilage, but on account of narrow space did not extend into the bony septum. Neither did I perforate the mucous membrane on the concave side. Result: marked improvement and no perforation.

Case II.—B. K., male, aged twenty-eight, affected with asthma from childhood and hay fever in August of each year, complained of nasal obstruction on both sides, due to hypertrophy of the right turbinal, and cartilaginous deflection to the left, including anterior portion of bone. I removed the right turbinal with cold snare, and resected the septal cartilage, extending back so as to include a little of the bone. During the operation the mucous membrane on the concave side was perforated. Hemorrhage was very free in spite of adrenalin. The flaps fitted nicely and healed without perforation. Breathing space is excellent on both sides, and the asthma is completely relieved.

Case III.—Mrs. B. F., aged about forty, consulted me January 9, 1903, for deflected septum, the left nostril being entirely occluded. Cartilage formed a rounded deflection with a projecting spur. I resected the deflected septum, and found the mucous membrane very adherent on both sides, necessitating careful dissection. Quite a large tear was made in the mucous membrane over the concave side. On this account it seemed best to take two stitches in the mucous membrane flaps in order to cover the torn mucous membrane. Healing took place without perforation. Breathing space is free.

Case IV.—J. W., male, aged fourteen, consulted me February 11, 1903, for nasal obstruction causing headache. Cartilage thickened and bent to right. I resected a portion of the cartilage. The space was very small and difficult to work in. There was considerable improvement, but the result was not entirely successful, and as the patient soon disappeared from observation the final outcome is unknown. It is my impression that a small perforation remained, although no mention is made in the brief record I have of the case.

Case V.—O. A., male, aged twenty-five, called on me February 21, 1903, for relief from a deflected septal cartilage. His nose was fractured when he was five years old, the left nostril becoming entirely occluded. I resected cartilage and stitched flaps in place. Operation difficult. Breathing free. General health improved. A small healthy perforation remains.

Case VI.—C. B., male, aged thirteen, fell three years ago and injured his nose. On February 20, 1903, I found the cartilage irregularly bent to the left and adherent to outer wall. The left nostril was entirely occluded. The adhesions necessitated careful dissection, and it was only with difficulty that flaps could be made at all. After the cartilage was resected it was found that a bony obstruction farther back still obstructed the passage. This was partially corrected at a subsequent sitting. Healing took place without perforation and with much improvement in the breathing space. Operative procedure farther back will be necessary before free breathing can be obtained.

Case VII.—W. S., male, aged thirty-seven, presented himself April 14, 1903, with cartilage thickened and deflected to right, causing entire obstruction. I resected cartilage. Breathing space free and general health improved. A small healthy perforation remains.

Case VIII.—N. J., aged seventeen. Cartilage and anterior portion of bony septum deflected to left. On August 21, 1903, I resected cartilage and part of bone. I did not perforate the mucous membrane on the right side during the operation. One stitch was taken to keep flaps in position. Healing perfect; no perforation; breathing free.

Case IX.—P. K., male, aged twenty-five. Cartilage deflected to right, forming rounded obstruction. On October 26, 1903, I resected cartilage, and should have included the anterior edge of the bone, but did not on account of the sensitiveness of the patient. Breathing and general health much improved. No perforation.

Case X.—J. K., male, aged seventeen. Spur and deviation obstructing right nostril. On December 15, 1903, I resected cartilage, which resulted in free breathing space without perforation.

Case XI.—W. H., male, aged twenty-eight. Right side obstructed by deflected septum, which involved both cartilage and bone. Left side obstructed by middle turbinal. Symptoms in this case were very severe. Pain in the head, pain and pressure over frontal sinus and nose. Patient complained of mental confusion, and was unable to work or to concentrate his mind. On February 11, 1904, I resected the nasal septum, including a portion of the bone, and the removal of the anterior portion of the left middle turbinal completely relieved him of his symptoms. No perforation resulted.

Case XII.—Mrs. S., aged twenty-eight. Obstruction to the right nostril which seriously affected her singing voice. Resection of the cartilage, which was performed March 22, 1904, gave free breathing space. No perforation.

Of these twelve cases, ten were men and boys and two were women. Three were boys fifteen, fourteen and thirteen years respectively. Two in youths of seventeen. The oldest patient was a woman a little over forty. Half of the cases had the deflection to the right, the other half to the left side. Several others had obstructive lesions that necessitated operation. All of the cases were improved. Most of the cases were entirely relieved of all the symptoms referable to the obstruction. Cases four and six, both in boys, were not entirely successful. The former was one of my early cases, and the lack of skill and proper instruments, and the narrow space in which I had to work, is sufficient to account for the partial success. The latter case was due to severe trauma, and could not have been relieved by any single operation. Three cases had a permanent perforation. While these perforations in no way affected the functional result, it is a much larger proportion than ought to exist from the operation. These perforations occurred during my early cases. Since becoming more familiar with the operation, and since I have had the proper instruments for its performance, I have not had a single perforation. A perforation may result from any operative procedure upon the septum. After becoming familiar with the technique of the resection operation, perforation ought to occur but rarely.

On the whole, the resection of the nasal septum appeals to the writer as the most satisfactory operation for the correction of deflections.

912 CHAMBER OF COMMERCE.

LABORATORY WORK FOR THE GENERAL PRACTITIONER.

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THE most exacting laboratory worker, if he has ever been ground beneath the wheels of a large practice, will freely admit that it is practically impossible for the general practitioner to make anything like complete laboratory examinations of his cases. Theoretically, it ought to be done, but practically it would mean ill health and a too early grave from overwork, if carried out to any degree of completeness. The novice in laboratory work is likely to have too exalted an opinion of every trifling test, in its bearing on diagnosis, prognosis and treatment. The laboratory specialist who knows little about the worries and trials of a large practice likewise overestimates the importance of this specialty. The clinician of large experience, both in the laboratory and at the bedside, has a sensible appreciation of the decided value as well as the frequent uselessness of laboratory analysis. The advantage which he has over the less experienced man is that he knows when these tests will be of value.

Not all patients require blood examinations; in fact, a very small percentage, but this small per cent of cases is entirely dependent upon such examination for accurate diagnosis, prognosis and treatment. As an example, take a case of pernicious anemia, which might otherwise be diagnosed carcinoma, tuberculosis or Bright's disease, et cetera; or take a case of splenomyelogenous leukemia. Such a case can be positively diagnosed with a blood examination, but without might be taken for chronic malaria with ague cake, splenic anemia, et cetera. By the same token it would be a waste of time to make a Widal test or diazo reaction in every fever patient; or a stomach analysis and quantitative estimation of urea in every chronic case. The physician who knows when these various tests will be of value, has learned one of the most useful lessons of medicine.

The busy doctor often does not know how to make these examinations and cannot afford to spend hours of time on complicated tests which will be only of scientific or theoretical interest. He clamors for a test which can be made quickly and easily, and which will be of undoubted help to him, either by its negative or positive evidence, in the diagnosis, prognosis and treatment of his cases.

This doctrine may sound somewhat sacrilegious to the ultrarefined laboratorian, but it is stating conditions exactly as they are and as they are bound to be for generations in everyday medical life, outside of hospitals.

The working standard of the profession in general can best be raised by emphasizing the great value of the few essential and easily applied tests, rather than by overwhelming and dumbfounding the untrained man with legions of difficult and time-consuming analyses, which only the trained chemist and bacteriologist can carry out and which in the end may be of very doubtful value, so far as the welfare of the patient is concerned.

In this article I will mention only those tests which are of practical value and which because of their simplicity and quickness can be employed by the average general practitioner.

BLOOD.

The majority of physicians after becoming busy will seldom resort to the time-consuming method of counting the red blood cells. It is possible in practice to satisfactorily follow the course of a case of pernicious or secondary anemia by frequently estimating the hemoglobin and examining with care the stained blood spreads. The blood examinations which I would suggest to the busy doctor are the following:

ESTIMATION OF HEMOGLOBIN.—Use the Tallqvist hemoglobin scale. It is cheap and the test so simple that the majority of one's patients could employ it. It is sufficiently accurate for practical purposes. Cabot recommends it for general use above all the more complicated methods with their expensive instruments. The scale is on the last leaf of a book of special filter paper. There are ten different color tints, which represent the color of hemoglobin from ten per cent to one hundred per cent. The following directions come with the book. The filter paper (a small strip folded) should be brought in contact with the drop of blood (the tip of the cleaned finger having been pricked with an ordinary writing pen, from which one nib has been broken off, or by one of the many blood stickers) in such a manner as to make it suck the blood slowly, till the paper is saturated by it. Comparing with the scale should be done by direct light, as soon as the blood stain loses its humid gloss. Measuring can be performed only by daylight. Normal power ninety to one hundred.

SPREADING.—The slide method of making blood spreads is the best for inexperienced workers. An ordinary clean microscopical slide is placed upon a flat, solid surface. The narrow edge of another slide is touched to a fairly large drop of blood as soon as it is squeezed from the finger, and then pressed against the first slide. Wait a moment till the blood spreads along the edge of the upper slide, then draw slowly along the entire length of the lower slide. The upper or spreader slide is held firmly in the fingers and at a slight angle. Somewhere on the lower slide there will be a good spread, that is, single layers of corpuscles.

STAINING.—It is best to select one good general utility stain, which will act satisfactorily on all of the blood elements, as cytoplasm, nuclei, all granules, chromatin of both red and white cells, and also stain the malarial organism. It should be easily and quickly applied. Such a stain is Wright's (Harvard). The fixing and staining of the spreads are done at the same time. It works best with comparatively fresh spreads. The film, air-dried, is covered with a few drops of the stain. Allow this to remain for one minute for the purpose of fixation, then add water, drop by drop, until it becomes semitranslucent and a reddish tint becomes visible at its margin, while a metallic scum forms on the surface. Allow this to remain from two to three minutes. Wash off in water and it will be noticed that the spread has taken on a bluish or purplish hue. To develop the differential staining of the various elements, wash in a glass of water till the better spread portions take on a reddish or yellowish hue; dry between filter paper and mount in cedar oil or Canada balsam (if a permanent mount is desired). A detailed description of this stain can be found in the *Journal of Medical Research* for January, 1902.

WIDAL TEST FOR TYPHOID FEVER.—Trustworthy results can only be obtained by a well-trained man, who is thoroughly acquainted with his culture of bacillus typhosus and who is making the test frequently. An incubator is essential and very few physicians feel justified in buying one. What the general practitioner should know is how to obtain the specimen of blood to be sent to the bacteriologist. Method: Press from the finger tip one good-sized drop of blood; let it fall on a cover slip or near the end of a slide, or on a piece of glazed paper (calling card). Make several of these and let them dry. With a single drop of blood it is possible to make any dilution desired.

COUNTING LEUKOCYTES.—The following diluting fluid is required: One-third of one per cent glacial acetic acid. Use the Thoma-Zeiss blood counter and dilute the blood one to forty with this solution. Use the low dry objective and ajust the tube of the microscope so that the visual field exactly cuts the corners of the large ruled square millimeter. Count all the white cells in this circular field. Calculate by the short method devised by Doctor F. T. Wright, of Douglas, Arizona, that is, count five such fields; to their sum add two ciphers and then divide by two. The result will be approximately the number of leukocytes per cubic millimeter. Example: 40+42+38+36+44 equals 200; 200 with two ciphers added is 20,000; this number divided by two gives 10,000, the number of white cells per cubic millimeter.

SPUTUM.

There are three important microscopical examinations: (1) Tubercle bacilli. (2) Elastic tissue. (3) Other bacteria.

TUBERCLE BACILLI.—Select suspicious opaque bits from the sputum which has been placed upon a small glass plate; smear upon cover slips or slide; cover with carbol fuchsin; heat above flame till well steamed; wash in water, then decolorize and counterstain with Gabbet's stain for one to two minutes; wash in water; dry between filter paper; mount in cedar oil or Canada balsam and examine with oil-immersion lens.

ELASTIC TISSUE.—Place a small amount of sputum free from food on a glass plate 4x5 inches; by means of a glass slide press it out into a thin transparent layer. The opaque bits are most likely to be elastic tissue. Transfer the plate to the stage of the microscope; use the low-dry objective, with most of the light shut off. Elastic tissue will appear as slender, branching, very refractile threads.

Other Bacteria.—Loeffler's methylene blue will stain most of the other important organisms, such as pneumococci, diphtheria bacilli, influenza bacilli, streptococci.

STOMACH CONTENTS.

The physician can easily learn to make the simple and most important tests in stomach analyses. First, a test breakfast of two slices of ordinary white bread (with crust removed) is washed down with a glass and a half of water. Remove this one hour later with a soft-bulbed rubber stomach tube (Goodrich Number 22A). Do not dilute with water; if not successful try a second time. Filter the contents removed and analyze the filtrate as follows: The most important findings are (1) the presence or absence of free hydrochloric acid. If present, estimate the amount; (2) the total acid present; (3) the presence of lactic acid; (4) the presence of food eaten the night before, indicating diminished motor power or pyloric obstruction; (5) the presence of long bacilli, yeasts, sarcines, et cetera, by microscopical examination.

The following solutions are necessary:

(1) Decinormal sodium hydrate solution, made by any chemist or manufacturing pharmacist.

(2) Five per cent alcoholic solution of dimethylamidoazobenzol (yellowish red).

(3) One per cent alcoholic solution of phenolphthalein (colorless).

(4) Five per cent aqueous solution of ferric chloride.

The following pieces of apparatus are necessary: (1) a burette stand; (2) a burette divided into one-tenth cubic centimeters; (3) a one cubic centimeter and a five cubic centimeter pipette; (4) a whiskey glass or beaker.

If there is a sufficient filtrate, place five cubic centimeters in the glass, add five cubic centimeters of distilled water, and make the following tests:

Free Hydrochloric Acid Qualitative Test.—Add two drops of the dimethyl solution to the filtrate. If free hydrochloric acid is present it will turn a rosy red color.

Free Hydrochloric Acid Quantitative Test.—Add to this same filtrate the decinormal sodium hydrate solution, drop by drop, stirring with a glass rod after each addition until it loses its pinkish color and becomes a permanent lemon yellow. Note the number of cubic centimeters of the decinormal solution required to bring about this end reaction and calculate the quantity of acid as follows: The results are express in the number of cubic centimeters of alkali required to neutralize 100 cubic centimeters of juice, which is the simpler way; or in per cent of acid by weight. It is convenient to remember that each twenty-five cubic centimeters of acidity corresponds approximately to 1 per cent by weight. In calculating the free hydrochloric acid, suppose it required two cubic centimeters of decinormal solution to neutralize five cubic centimeters of juice. In order to neutralize one hundred cubic centimeters of juice, it would require twenty times as much as for five cubic centimeters, that is, two times twenty equals forty, or the amount of free hydrochloric acid. To convert this figure into per cent by weight, multiply 40 by .00365. This gives .146 per cent of free hydrochloric acid.

TOTAL ACIDITY.—To this same filtrate which has been titrated for free hydrochloric acid, add two drops of phenolphthalein solution and continue the titration with the decinormal solution till the yellow solution changes to the first permanent pink or purple. Note the number of cubic centimeters of decinormal solution used from the beginning of the titration, and calculate as before and the result will be the total acidity. By this method it will be seen that with only one cubic centimeter of filtrate, both the free hydrochloric acid and the total acidity can be determined.

LACTIC ACID.—*Kelling's test*—Dilute five cubic centimeters of gastric juice ten to twenty times with water and add one or two drops of a five per cent aqueous solution of ferric chloride. In the presence of even a small amount of lactic acid a distinct green color is obtained if the tube is held to the light.

URINE.

Only the most useful tests will be mentioned. It may be taken for granted that very few of the innumerable quantitative estimations of urea and uric acid, made either by or for physicians, have been of any real value. No attention is paid to the diet; the estimation is seldom made more than once, and frequently only a sample, instead of a twenty-four-hour specimen, is examined.

TOTAL SOLIDS.—The accurate determination of the total solids, by the weighing of the solids after the evaporation of the water from a certain volume of urine is out of the question in practice. *Short and approximately accurate method of estimating the solids.*—Multiply the last two figures of the specific gravity by .233 (Trapp's coefficient). The product gives the percentage weight of solids present. Then calculate the total solids for twenty-four hours from the daily amount of urine. This method cannot be used with diabetic urine.

ALBUMIN.—*Qualitative test.*—The Napoleon-Boston test is the easiest and best. A piece of narrow glass tubing about ten inches in length is placed in the urine to a depth of about one and one-half inches; during withdrawal the tip of the right index finger is placed over the top of the tube, thus holding the column of urine in the tube. The wet end of the tube is wiped dry with a towel and then plunged into a small test-tube containing nitric acid; the pressure of the finger is gradually released, the heavy nitric acid forcing the lighter urine up into the tube. If there is the slightest trace of albumin present a clean-cut white ring forms at the point of contact of the two fluids. This test is much more satisfactory than Heller's. *Quantitative test.*—Volume Method: Fill a test-tube two-thirds full of urine, boil and add a few drops of nitric acid (occasionally it is necessary to add a good many drops of acid). Allow the precipitate to settle for twenty-four hours, then estimate the volume of albumin in fractions of the urine used; that is, one-sixth volume or one-fourth volume, et cetera. This does not give the per cent of albumin, but practically is just as useful.

SEDIMENT.—The sediment should be examined especially for the various kinds of casts, blood and pus cells and the various crystals. Place several drops of the sediment on a glass slide (separately for more extensive examination); do not cover with a cover slip. Use the low, dry objective and adjust the diaphragm so as to shut out most of the light.

SUGAR.—*Qualitative test*—Haine's test is the best of the copper tests. Formula: Take pure copper sulphate, thirty grains; distilled water, one-half ounce; make a perfect solution and add pure glycerine, one-half ounce; mix thoroughly and add five ounces of liquor potassæ. Test: Take about one drachm of the solution and gently boil it in an ordinary test-tube. Next add from six to eight drops—not more—of the suspected urine, and again gently boil. If sugar be present, a copious yellow or yellowish red precipitate is thrown down. This test solution is stable and can be kept indefinitely. *Quantitative test.*—The test in common use is titration with Fehling's solution. To my mind this test is unreliable and impracticable in most hands; it requires too much time and the precipitate attending the end reaction greatly obscures it and renders it uncertain. Even men who have taught urine-analysis for years declare it a very unsatisfactory method. It is such a bugbear to the general practitioner that he seldom calculates the percentage of sugar in his pathological urines. A method which I can most heartily recommend because of its accuracy and ease of application is Purdy's modification of Pavy's test. A country doctor who used it during one of my summer school sessions at Michigan, declared that now he would make quantitative examinations of diabetic urines. Doctor Prentiss B. Cleaves, an accurate and experienced laboratory worker, at my request, made a series of sugar determinations on the same urine, using the three best known methods, that is, Fehling's, Purdy's and the fermentation method. His results with all three methods varied by a very small fraction of a per cent, thus proving Purdy's a very accurate method. Its advantages are these: The solution will keep indefinitely; the end reaction, which is a change of the blue solution to a transparent, colorless solution, without precipitate, presents no difficulties whatever. Formula for Purdy's test—Standard solution: Pure cupric sulphate, 4.752 grammes; potassium hydroxid, 23.50 grammes; strong ammonia (United States Pharmacopeia, specific gravity, 0.9), 350 cubic centimeters; pure glycerine, 38 cubic centimeters; distilled water to 1,000 cubic centimeters (one litre). Prepare by dissolving the cupric sulphate and glycerine in two hundred cubic centimeters of distilled water with the aid of gentle heat. In another two hundred cubic centimeters of distilled water dissolve the potassium hydroxid. Mix the two solutions and when cooled add the ammonia. Finally, with distilled water, bring the volume of the whole to exactly one thousand cubic centimeters (one litre).

The principle of the test depends upon the fact that, in the reduction of cupric oxide in solutions of definite strength by grape sugar, the blue coloration disappears by addition of a definite quantity of grape sugar—thirty-five cubic centimeters to 0.02 gramme of sugar—without any attendant precipitate, but leaving the reduced solution perfectly colorless. Thirty-five cubic centimeters of this solution are reduced by exactely two centigrammes (0.02 gramme) of grape sugar.

The analysis is best conducted as follows: Have on hand a glass flask (one hundred and fifty or two hundred cubic centimeters' capacity), an ordinary retort stand, a ten cubic centimeter finely graduated burette, and a large alcohol lamp or a Bunsen burner. Proceed by measuring accurately thirty-five cubic centimeters of the test solution into the flask; add water to nearly half fill the flask and bring the contents thereof to the boiling point. Fill the burette with the urine to be tested and slowly discharge the urine into the boiling test solution, drop by drop, until the blue color begins to fade; then still more slowly, three to five seconds elapsing after each drop, until the color completely disappears, and leaves the test solution perfectly transparent and colorless. The number of cubic centimeters of urine required to discharge the blue coloration in thirty-five cubic centimeters of the test solution contains exactly two centigrammes of sugar (0.02). The following, therefore, is the percentage relationship of reduction of the test: If it requires two cubic centimeters of urine to reduce thirty-five cubic centimeters of the test solution, there is present exactly one per cent of sugar, et cetera.

Upon standing some time, the test solution slowly resumes the blue color again. This is due to reoxidation, which is somewhat rapid, and should not be mistaken for imperfect reduction or defect in the test solution. The best results are reached by first diluting the urine before titration. If the quantity of sugar be very large (over five per cent) three volumes of water and one of urine will prove best; multiply the product by four.

Bile.—A simple and useful test for bile is to place the suspected urine in a test-tube. Shake vigorously and if the foam takes on a greenish tint it indicates the presence of bile.

Diazo Reaction.—In obscure febrile cases where there is a suspicion of typhoid fever, this test should be made daily, as it is more indicative of typhoid fever than of any other acute disease. Solutions: (1) Sulphanilic acid, 1; hydrochloric acid, 50; distilled water to 1,000. (2) Sodium nitrate, 0.5; distilled water to 100. Test: To fifty parts of solution number 1 add one part of solution number 2 and shake. To a few cubic centimeters of this mixture and an equal quantity of urine add a quantity of stronger ammonia, equal to about one-eighth of the combined volume of the mixed urine and solution, letting it run carefully down the side of the test-tube. At the point of contact of the ammonia and the mixture, colored rings of various tints form, ranging from light yellow, through dark yellow, orange and brown, to eosin or garnet, depending on the urine. The formation of a red zone is an indispensable part of the true Ehrlich diazo reaction. It is also essential that, on shaking, the foam take on a pink color. This color varies considerably in intensity, depending upon the strength of the reaction from the palest rose to the deepest pink, and must not be of any other color, such as salmon, orange, et cetera.

MILK.

Analysis for Clinical Purposes.—(1) The specific gravity and (2) the amount of fat are the important points to be determined. They furnish a good idea of the nutritive strength of the milk. *Specific Gravity.*—This can be taken with an ordinary urinometer. In the examination of mother's milk, however, because of the small quantity obtained, a lactometer such as Holt's, is usually required. Woman's milk has a specific gravity of 1,030 to 1,040; cow's milk has a specific gravity of from 1,028 to 1,033. *Determination of Fat in Woman's Milk.*—The simplest method is by the use of a cream gauge, such as Holt's. His directions are as follows: The tube is filled to the zero mark with freshly-drawn milk, which stands at room temperature for twenty-four hours, when the percentage of cream is read off. The ratio of this to fat is approximately five to three; thus five per cent cream indicates three per cent fat, et cetera. Both woman's milk and cow's milk have an average of four per cent of fat. *Determination of Fat in Cow's Milk.*—Babcock's test is extremely useful. It is performed just as it is in the creameries except that one uses small centrifugal tubes adapted to the ordinary laboratory centrifuge.

To make the test the requisite amount of milk, five cubic centimeters, is accurately measured in a pipette and introduced into the tube. Strong sulphuric acid (specific gravity 1.83 to 1.84) is added till the tube is filled to the shoulder, and the fluids are thoroughly mixed. When the mixture becomes dark and homogeneous, add sulphuric acid to the top of the graduated scale, and again mix the fluids. Revolve the tube in the centrifuge for a couple of minutes. The liberated fat is concentrated at the top of the tube and its amount is read off at once from the scale. If from cooling the fluid contracts below the graduation, the tube should be placed in hot water until the fluid expands sufficiently to enable the result to be read. The column of fat should be free from bubbles and undissolved casein. Holt also suggests the use of Feser's lactoscope, an optical test, which is quite accurate, with a little experience.

REAGENTS.

Reliable stains, chemicals and laboratory apparatus can be obtained of Eberbach & Son of Ann Arbor, Michigan; Hynson & Wescott, Baltimore, Maryland; The Harvard Cooperative Institute, Boylston street, Boston. Denver is decidedly lacking in one good laboratory supply house where all of the reliable materials needed can be secured without running all over town. Paul Weiss, 1606 Curtis street, has a limited supply of stains and apparatus. The Denver Fire Clay Company furnish chemicals and apparatus.

A RAPID PROCEDURE FOR THE ESTIMATION OF THE PEPTIC VALUE OF STOMACH FLUID BY MEANS OF THE METT METHOD.

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[FROM PROFESSOR DOCK'S CLINIC.]*

It has been our plan in the Medical Clinic of the University Hospital to regard the ten-hour observation of Mett tubes as the end reaction of the test. This is the time recommended by Pawlow and most of the reports of other writers are based upon the ten-hour time limit. There is no special reason why ten hours should be selected in preference to any other time unless it be that the longer the period of digestion the less the error in reading the tubes. Custom, then, has now made it necessary for purpose of comparison that a definite time be employed, and it is easy to see how absolutely necessary this is. Ssamojloff showed that there was a definite relation between the time of exposure and the amount of digestion of the egg white at least for ten hours. This being the case it would not be difficult to estimate at two, three or four hours what the digestion in millimeters will be at the end of ten hours. While experimenting with artificial gastric juice and Mett tubes in December, 1902. I noticed a striking proportional similarity between the degree of solution of egg white at the end of certain definite spaces of time—two, four, six, eight and ten hours. I made another series of experiments and found the results similar to the first. As it will take too much space to give the experiments in their entirety and the application of the formula to each, I will take only two observations of each tube and apply the formula to the first reading.

If we let A = the amount of digested egg white,
B = the time the tubes remain in incubator,
C = the required time (ten hours) for the end reaction,
and X = the peptic value of the fluid tested,
it will be found that— $\frac{A \times C}{B} = X$, or

$$\frac{\text{Millimeters digestion} \times \text{ten hours}}{\text{Time in incubator}} = \text{peptic value in millimeters}$$

EXPERIMENT I.

Varying strengths of pepsin and hydrochloric acid were employed for each tube.

Tube Number	Millimeters of digestion after two hours.	Millimeters of digestion after ten hours.	Computed digestion at ten hours.
1	0.4	2.00	2.00
2	0.58	2.58	2.90
3	0.33	2.75	2.65
4	0.66	3.00	3.30
5	0.58	3.00	2.90

Low power lense and fine scale were employed for these observations.

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*This work is part of a series of experiments with Mett tubes began at the suggestion of Doctor Dock in the fall of 1902.

EXPERIMENT II.

For this experiment the same artificial gastric juice was employed for each tube. It consisted of pepsin one per cent, free hydrochloric acid thirty and total acidity forty. The tubes were kept in incubator at 37° to 38° centigrade. Each tube contained five cubic centimeters. Measurements were made quickly without the aid of a lense.

Tube Number	Time Three hours.	Time Nineteen hours	Computed digestion at nineteen hours.	Computed digestion at ten hours.
1	1 Millimeters	6 Millimeters	6.33 Millimeters	3.33 Millimeters
2	1 "	6 "	6.33 "	3.33 "
3	1.25 "	7 "	7.91 "	4.11 "
4	1 "	6 "	6.33 "	3.33 "
5	1.25 "	6 "	7.91 "	4.11 "
6	1.25 "	6 "	7.91 "	4.11 "
7	1.25 "	6 "	7.91 "	4.11 "
8	1 "	6 "	6.33 "	3.11 "
Average	8) 9.00 1.12	8) 49.00 6.12	7.09	3.73

Computed digestion means that the formula has been applied to the measurements of the tubes after two hours digestion in Experiment I and after three hours in Experiment II. The results of the computation method and the ten-hour method are almost identical.

Experiment II was executed for the purpose of ascertaining how near the results would be if the readings of a number of Mett tubes in similar amounts of stomach fluid were made with the unaided eye and an average taken.

A third experiment was made as follows: Five cubic centimeters of the artificial gastric juice of Experiment II was placed in a test-tube and to this four Mett tubes were added. This test was started and completed at the same time as the tubes in Experiment II. The solution of egg white was distinctly less in all the Mett tubes.

The same results as above were obtained with stomach fluid.

The foregoing experiments are certainly convincing enough to show that the amount of peptic digestion in a Mett tube varies as the time, or is directly proportionate to the time. That is, at four hours we ought to have twice as much digestion as we have at two hours. If it were possible to prepare tubes in such a way that they would be equally coagulated throughout and perfectly free from bubbles the results would be absolute.

While the result obtained by the computation method may, possibly, not be so accurate as the ten-hour observation method, from a practical standpoint it is sufficiently accurate. It must be remembered that at best the test is only approximate and far from accurate.

The computation method makes the test not only more convenient than the egg disc method, which is almost wholly a qualitative test, but it renders it unnecessary to make observations of Mett tubes at any fixed time.

All we need to know is the time the tubes were placed in the incubator.* Any time after solution has taken place the computation can be made. Should, perchance, the test be forgotten and measurements not made until after the ten hours, the formula still holds good.

MM	SQUARES	MM	SQUARES	MM	SQUARES	MM	SQUARES	MM	SQUARES
1	1	31	961	61	3721	91	8281	121	14641
2	4	32	1024	62	3844	92	8464	122	14884
3	9	33	1089	63	3969	93	8649	123	15129
4	16	34	1156	64	4096	94	8836	124	15376
5	25	35	1225	65	4225	95	9025	125	15625
6	36	36	1296	66	4356	96	9216	126	15876
7	49	37	1369	67	4489	97	9409	127	16029
8	64	38	1444	68	4624	98	9604	128	16284
9	81	39	1521	69	4761	99	9801	129	16541
10	100	40	1600	70	4900	100	10000	130	16900
11	121	41	1681	71	5041	101	10201	131	17161
12	144	42	1764	72	5184	102	10404	132	17424
13	169	43	1849	73	5329	103	10609	133	17689
14	196	44	1936	74	5476	104	10816	134	17956
15	225	45	2025	75	5625	105	11025	135	18225
16	256	46	2116	76	5776	106	11236	136	18496
17	289	47	2209	77	5929	107	11449	137	18769
18	324	48	2304	78	6084	108	11664	183	19044
19	361	49	2401	79	6241	109	11891	139	19321
20	400	50	2500	80	6400	110	12110	140	19600
21	441	51	2601	81	6561	111	12331	141	19881
22	484	52	2704	82	6724	112	12554	142	20164
23	529	53	2809	83	6889	113	12769	143	20449
24	576	54	2916	84	7056	114	12994	144	20736
25	625	55	3025	85	7225	115	13225	145	21025
26	676	56	3136	86	7396	116	13456	146	21316
27	729	57	3249	87	7569	117	13689	147	21609
28	784	58	3364	88	7744	118	13924	148	21904
29	841	59	3481	89	7921	119	14161	149	22201
30	900	60	3600	90	8100	120	14400	150	22500

As an example: Suppose if at the end of two hours four millimeters of digestion took place, at ten hours there would be $\frac{2 \times 10}{4} = 5$ millimeters. Suppose this same tube were allowed to digest for nineteen hours and measurement shows 9.5 millimeters digestion, at ten hours there would be $\frac{9.5 \times 10}{19} = 5$ millimeters.

*Tubes carried in the vest pocket give good results.

It must be further remembered that the figures thus obtained do not represent the peptic value. This is entirely a different thing. The peptic value does not vary as the number of millimeters but as the square of the millimeters of digested albumen. In the latter case instead of having twice as much peptic value at the end of four hours as we have at the end of two, we have the values 16 and 4 respectively.

The preceding table is in use in our laboratory for the purpose of saving time. The squares of the millimeters of digested egg white are to the right of the millimeter column, in bold-faced type.

EXPLANATION OF TABLE.

Suppose the amount of digested egg white in ten hours is thirteen, the peptic value will be found opposite 13, namely 169. If the amount of digested egg white is 1.3 the peptic value will be found opposite 13 by pointing off two decimals to the left, namely 1.69; or if there was 7.5 millimeters digested the square will be found opposite 75 by pointing off two decimals to the left, or 56.25; or opposite 148, if 14.8 millimeters are dissolved.

CONCLUSIONS.

(1) The amount of digestion in a Mett tube varies directly as the time.

(2) For all practical purposes it is absolutely unnecessary to make observations at any definite time.

(3) To overcome errors due to bubbles and defects in tubes take the average reading of several Mett tubes which, respectively, have been placed in similar quantities of stomach fluid. A low power lense and fine millimeter scale are to be preferred.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, JANUARY, 4, 1904.

THE VICEPRESIDENT, DAVID S. DOUGHERTY, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

DOCTOR ROYAL WHITMAN read the paper of the evening, subject, "A New Method of Treatment for Fracture of the Neck of the Femur." He called attention to the fact that it was generally admitted that the results of treatment of fracture of the neck of the femur are very unsatisfactory. These results are to be ascribed, not so much to the age of the patient or to the severity of the injury, as to the faulty conception of treatment and its perfunctory application. At present it is taught that no attempt should be made to correct the deformity of an impacted fracture, a deformity which is essentially a traumatic coxa vara; while the means employed to appose the fragments and to hold them in position, if the fracture is complete, are quite ineffectual, as demonstrated by the fact that shortening is almost always present when the treatment is concluded. He said that fracture of the neck of the femur is not uncommon in childhood and in vigorous life, but as it is often incomplete, it is usually classed as contusion. These cases are unrepresented in hospital statistics.

The treatment which he had already described as applicable in childhood (*Annals of Surgery,* November, 1902), he would, on further experience, now urge as one of routine in all favorable cases. In principle, it is a method of replacing the fractured neck, if the fracture is incomplete or impacted, and of apposing and retaining the fragments in approximate apposition if it is complete. If the fracture is impacted, the patient having been anesthetized, the extended limb should, under traction, be slowly abducted. As in every instance in which depression of the neck is present, abduction would be checked when the neck comes into contact with the upper border of the acetabulum, further forcible deduction by means of the leverage of the extended limb on the fulcrum of the acetabulum would disengage the impaction and elevate the neck. At the limit of normal abduction a long plaster spica bandage should be applied. If the fracture is complete the shortening should be reduced by traction and countertraction. The limb should then be abducted, and by downward pressure on the trochanter the outer fragment may, if of sufficient length, be pushed beneath the rim of the acetabulum. Abduction should then be increased until the trochanter is brought into contact with the side of the pelvis, so that upward displacement is impossible. In this attitude it is evident that muscular contraction becomes powerless to induce deformity, while the firm support of the plaster bandage permits necessary movements without danger of displacement. The details of the treatment and the after treatment were described and the modifications that might be necessary to meet varying indications. Closing, the reader again called attention to the large number of patients, still youthful or in vigorous old age who, because of failure of diagnosis and inefficient treatment, were in great degree disabled by this injury. He said that the limitations of weakness and age so often urged as an excuse for the present ineffective and perfunctory treatment should not be extended to this class, but that one should attempt to apply here the principles that are admitted as being essential to the successful treatment of fracture in other situations.

DISCUSSION.

DOCTOR JOHN A. BODINE: This paper is particularly interesting to me because I control practically the largest fracture service in the country at Saint John's Hospital, Long Island City. Some years ago I was called to see a patient who, as far as I could make out, had sustained an injury to the patella ligament, and there was relaxation between the patella and its insertion. I had never been told that fracture of the neck of the femur was a condition of young life, and sent the patient to Doctor Whitman, who made the diagnosis. Most of the patients were forty, fifty and even sixty years of age, who were included in my service, and were thin and emaciated for the most part, and an anatomical cure was more than could be hoped for. If the patients could get about with the limb supported by a high shoe, the surgeon had to be content, but in future I will be glad to try Doctor Whitman's method. About two years ago Doctor Maxwell reported several cases in which he put on twenty to thirty pounds pressure to reduce the shortening, and in addition lateral extension of some ten pounds, as he claimed that in case the neck of the bone was pulled down, a better position resulted. He showed four postmortem specimens secured from patients who died some years after this method was applied, which showed almost perfect union. Doctor Whitman claimed these ends could be brought into apposition. His method possessed a great advantage over others. But in young people why not use direct operative interference? The surgeon can cut down, certainly, on the great trochanter.

Doctor Alexander Lyle: I was surprised that the writer of the paper advocated the breaking up of an impacted fracture. I thought that the age and general physical condition of the patient should be taken into consideration before adopting this procedure. I am sure that if the general condition were unfavorable, it would not be justifiable to release the impaction. I have noticed that fractures of the neck, near the trochanter, are almost invariably impacted, and those near the head of the femur are not impacted, which might be an important point in diagnosis.

Doctor Whitman: In reply to Doctor Bodine I would say that twenty-six cases of fracture of the neck of the femur in childhood have come under my observation, and that in a single year I have seen five cases in young adults, in not one of which had the diagnosis been made. I am not ready to admit that because a person is sixty years of age, treatment is useless. Direct operative intervention is, of course, a treatment of last resort, that may be applied only under favorable conditions. It, however, might be the treatment of selection for partial epiphyseal separation in young subjects.

REPORTS OF CASES.

PRIMARY ENDOTHELIOMA OF THE LUNG AND PLEURA.

Doctor Maurice Packard: I wish to present this patient, aged twenty-four years; cigarmaker by trade. Father died of endocarditis, sister of apoplexy, brother of diabetes. No history of tuberculosis in the family. The patient gave no history of syphilis or of alcoholism, and claims he was never ill until the present time. About five years ago he began to cough, with very little expectoration, but otherwise was perfectly healthy until fifteen months ago, when the cough became more distressing and was accompanied by profuse expectoration. He became very short of breath, especially on exertion, and suffered from pains localized anteriorly on the right side. These pains were increased on deep, inspiration. There were no night sweats, nor, at that time, any hemoptysis nor loss of weight. Although the examination of the sputum was negative, he was sent South with a diagnosis of tuberculosis. As there appeared to be no improvement, he remained but a short time. The symptoms continued about the same, but he noticed that the veins of his chest and abdomen were growing larger, and that when he coughed he brought up considerable blood, sometimes as much as a cupful. His sputum examination was still negative. I saw him for the first time about two months ago, and his examination developed the following: The man was fairly well nourished, but had peculiar varicosities on the chest and abdomen. His right lung did not expand as well as the left, and there seemed to be a change in the dimension of the throacic arch. Pectoral fremitus was diminished on the right side, from the second to the fifth intercostal space, and from the sternum to the axillary line. Over this area the percussion note was flat, but over the other portions of the same lung and over the left lung it was almost normal. Vocal fremitus was diminished, and distant bronchial, almost tubular breathing could be heard over this affected region. Over the other portions of this lung the sounds were normal. The heart, spleen, liver and abdominal organs were normal. Sputum examination and thoracentesis were negative; the urine was normal. One month ago signs similar to the above were found posteriorly in the lower lobe of the right lung.

ERYTHROMELALGIA.

DOCTOR CHARLES J. LYNCH: I wish to present this case of Wier Mitchell's disease, or erythromelalgia, occurring in a man fifty-one years of age, who is also the victim of tabes. The patient is single, and an officer in the navy. He has had the ordinary diseases of childhood. During adolescence he had pneumonia twice and typhoid fever. While on a cruise to the far East he had Chinese malaria(?). (From his description one would be warranted in presuming that it was lues). Since he was twenty years old and to the present time he had been free from sickness, except for three attacks of tripper. After the Spanish-American war he noticed that he had difficulty in holding his water (hurried sphincteric action), which was shortly followed by difficulty in walking (ataxic gait) accompanied by sharp, shooting, stabbing pains in the feet and legs (lightning pains). On consulting the ship's surgeon about his difficulty in walking he was told he was suffering from beginning gangrene of the left foot. He was put to bed and his condition improved. Six months later the other foot became involved. The first two toes were then amputated. After recovery from this operation he retired from the service.

ACUTE THYROIDISM FOLLOWING CURETTAGE.

DOCTOR BROOKS H. WELLS: I wish to report a case of this disease. Since the time when the Roman matron measured with silken ribbon the throat of the bride before and the day after marriage, to determine by its rounded increase that she had been a pure virgin, the sympathetic relation of the thyroid gland to the pelvic organs has been vaguely known; but hardly more than a decade has passed since we began to appreciate the various facts that will in time lead to an accurate knowledge of the functions and physiology of this and the other ductless glands. Under certain conditions there occurs in those individuals who have been the subjects of a thyroid tachycardia a virulent acute toxemia characterized by a well-marked group of symptoms. This toxemia may follow operations upon the thyroid itself, operations upon the pelvic organs, or, more rarely, operations upon the breast or other parts of the body, or any marked nervous strain. The exact mechanism by which the functions of the gland is disturbed or excited is not definitely known. The disturbances after operations on the thyroid itself have been attributed to an outpouring of toxic material into the blood, either as the result of the manipulation to which the gland is subjected or from a leakage and absorption from its cut surfaces. These causative factors can be ruled out when the thyroidism follows operations on other parts of the body. In cases similar to the one recorded below it seems certain that the condition is the result of a reflex disturbance of the central nervous centres and the sympathetic centres that control the activity of the thyroid gland or, as has recently been suggested, of the parathyroids. The condition is often rapidly fatal, death occurring within the first three or four days from cardiac exhaustion. When recovery ensues the symptoms rapidly or gradually disappear until the victim reaches the status present before the attack.

The following case of acute thyroid poisoning following curettage seems to possess features of interest which make it worthy of record: Mrs. X., aged fifty-three years, had passed the menopause at the usual time, but during the last six months patient had repeated small bleedings from the uterus, which was not enlarged, and was freely moveable. She was nervous, thin and poorly nourished. For many years she had had a slight enlargement of the right lobe of the thyroid, an excitable, rapid pulse and slight tremor, but no protrusion of the eyeballs. Auscultation of the chest revealed a few bronchial rales. No other pathological condition was discovered. To exclude the possibility of beginning cancer of the fundus uteri as a cause for the post-climacteric bleeding a curettage of the uterus was performed under strict asepsis on November 5, at 10 A. M. The scrapings from the endometrium were examined by Doctor Jeffries, Pathologist at the Polyclinic, who reported that they showed only a moderate grade of endometritis. There were no further symptoms, local or general, that could be referred directly to the curettage. The anesthetic was given by Doctor Bennett and was gas followed by ether. After a few breaths of ether her heart became so rapid that Doctor Bennett considered it wise to change to chloroform, under which the heart became slower. From the beginning of the anesthesia to the return to consciousness a little less than half an hour elapsed. Six hours later the patient was flushed, tremulous, nervous, voluble, but not worried, and with mind clear. Her pulse had risen to 130 and became more rapid on any little excitement. Temperature 100.5° Fahrenheit. Twenty-four hours after the operation the flush, tremor, nervousness and volubility were increased; the pulse had risen to 178 and at times was uncountable; her temperature was 99.5° Fahrenheit, there was profuse sweating, a watery diarrhea, marked irritability of the bladder with polyuria, many soft rales all over the chest, and vomiting. The thyroid was perceptibly enlarged, especially on the right side, and presented a quite apparent thrill. There was marked throbbing of the heart and large arteries. Examination of the urine showed a sour odor, reaction neutral, specific gravity 1012, no albumin, no casts, innumerable colon bacilli, and a few pus cells. These symptoms of an extreme toxemia continued to the end of the first week, when her temperature reached 101.6° Fahrenheit, and the auscultatory symptoms of bronchitis became more marked, though there was little cough and little expectoration. Blood examination at this time showed no leukocytosis and no typhoid reaction. From the fifteenth to the twenty-fourth day the patient's condition was such that death was expected to occur at any time. The toxic symptoms continued, the tongue became dry and brown, there was extreme weakness and the usual relation between temperature and pulse was reversed so that the most rapid and weak heart action was when the temperature was lowest. The diarrhea ceased to be troublesome on the twenty-first day and on the twenty-fourth the patient was able to take small amounts of solid food by mouth. From this time on improvement was steady, but slow, until she reached a condition approximating that before the operation.

Regarding treatment it may be said that at the beginning it was thought that some of the symptoms might be dependent upon an intestinal toxemia, and the patient was given calomel followed by a saline and repeated high colonic flushings. The bladder for several days was washed out with a boric acid solution at eight-hour intervals, the washings being followed by the injection and retention of two ounces of a ten per cent argyrol solution. The diarrhea was finally controlled by tannigen by mouth, ten grains every three to six hours as needed, and starch and deodorized tincture of opium, ten minims, by rectum, every six to eight hours. The insomnia was relieved by the opium and by trional at night, in doses of from twenty grains at first to five grains at a later period. As it became impossible to make the patient retain food given by mouth, rectal alimentation was employed more or less from the eleventh to the twenty-second day. Solid food in small amounts was given on the twenty-fourth day. The heart action and general condition were not benefited by any drug; colonic flushing, strychnin, digitalis, belladonna, suprarenalin, alcohol, all seemed to do more harm than good.

DISCUSSION.

DOCTOR ROBERT C. MYLES: One of the peculiar characteristics of exophthalmic goitre is the diminished electrical resistance. If some one would experiment with these cases in order to ascertain, if possible, what alkaloid is discharged into the system, and its exact relation to the thyroid, I think these cases could be treated more successfully.

LEPROSY.

Doctor Frederick H. Dillingham: I desire to present a patient, aged fifty-eight years, who was born in America, and has lived here, with the exception of one year spent in Mexico, during his entire lifetime. Eight or nine years ago a corn appeared on his right foot. It began to burn and in a short time a perforated ulcer developed. He had the joint excised, and two years afterwards the second joint was also treated in this manner. Two years later a second ulcer appeared on the other side of the same toe. There are now two perforating ulcers present. This is about all the history the patient can give. The diagnosis can easily be made from the typical picture presented and by exclusion of any other condition because of the lack of essential conditions. The brownish patches here and there and the peculiar brownish color and scaling appearance of the limb are characteristic of leprosy. There is more or less atropy of the foot and also of the hand, but very little loss of sensation. There are three types of leprosy. The question of contagion is interesting in these cases. In some countries leprosy undoubtedly is contagious, but, in my opinion, this is not true in our climate. There are several cases in this city all the time; and no case has been reported that has developed as the result of contact with another patient suffering from the same condition. I once saw a patient in whose case I made a diagnosis of leprosy, and she informed me that her husband had suffered from the same condition before it developed in her. In countries where leprosy is prevalent, people who have proper food and proper hygienic surroundings very rarely contract the disease. Some authorities claim that it is infectious, some that it can be conveyed only by direct contact, and some that it is a concomitant of yellow fever and malaria. Experiments have been made by having lepers breathe into a certain receptacle, and colonies of bacteria have been grown from the atmosphere into which they breathed, showing that the mucous membrane of the mouth may be the source of infection. Inoculation, as a rule, has been negative. I succeeded, some years ago, in inoculating some persons with leprosy, but there was some doubt about its being a leprous family, so that experiment proved nothing. Some guinea pigs were inoculated with tuberculous nodules, and eight months later bacilli were found in the kidneys, spleen and liver. The duration of the disease varies, according to the form. Some patients live twenty years after the symptoms appear. The patient before the society has suffered from this condition for about nine years, and, except that it was rather inconvenient for him to get about, he was not incapacitated for work.

CAST OF A BRONCHIAL TREE.

Doctor Ferdinand M. Jeffries: I desire to present a cast of a bronchial tree. The cast is from a patient suffering from fibrous or plastic bronchitis. It shows the ramifications of the smaller bronchial tubes. It is the first specimen of the kind I have seen in a laboratory experience of twelve years, and for this reason I thought it worthy of note.

ORIGINAL ABSTRACTS.

MEDICINE.

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AND
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CHICKENPOX CONCURRENT WITH SMALLPOX.

An article by Bourland (*Medical News*, January 2, 1904) under the above title deserves careful study. In Calumet and adjacent villages one hundred six cases of smallpox were reported between May 31, 1900, and December 3, 1902, with four deaths. At Lake Linden, five miles away, there were not more than a dozen cases, but varicella prevailed, especially in the winter of 1901-2, fully one hundred cases occurring in Doctor Bourland's practice. At the time of the outbreak there were no cases of variola, though there had been some before, and some occurred later. The chickenpox was confined to the children in one school for nearly two months. Nearly all under twelve years of age acquired it. One child of eight, who had had it at three years of age, acquired it a second time. None of the exposed adults had ever had variola, and none had varicella, the oldest patient with the latter being a girl of fifteen. In cases wherein the incubation period could be determined, it varied from eight to sixteen days, the average being from eleven to twelve days. A prodromal stage of a few days, with malaise and anorexia was noted in a few cases. Sometimes there were no symptoms of onset. In very young children fretfulness, anorexia, itching and fever ushered in the sickness. The temperature was as high as 101.5°, but rarely exceeded 100.5°. Congestion of the fauces, pharynx and palate was present in nearly all cases, and was accompanied by lesions of the mucous membranes. There was no preliminary scarlatiniform rash. The lesions appeared as a rule on the trunk, generally the back, and they were usually more thickly spread on the back, but the forehead, temple, back of neck, postauricular region, axilla, arms and legs are cited as first affected in some cases. Often the disease was not suspected until the eruption appeared in the face, but examination showed older spots on the trunk and limbs, the oldest on the back. Full eruption always occurred in twelve to twenty-four hours, sometimes in six hours. The lesions were numerous and widely distributed, such places as the dorsal and palmar surfaces of the hands and fingers, the pharynx, fauces, and hard palate being involved often, but the soft palate and tongue only rarely. The feet and toes were rarely affected. The lesions began as small, thinly covered, red papules, with little or no induration. The papule was surrounded by a zone of hyperemia. Within a few hours vesiculation began, the vesicles being thin, small, at first clear or pearly. They had an average diameter of one to two millimeters, but they reached a size of five millimeters. In one case of varicella some vesicles measured eight millimeters and over. On the second or third day the vesicles became turbid, and not only flattening, but even umbilication was observed. In three to five days from the beginning of vesiculation crusts formed, from yellow brown to chocolate color, and were surrounded by a zone of congestion. The lesions appeared in crops, so that by the third or fourth day all stages were present. At from five days to a week the crusts were all drying, the earlier ones loosening, but the latest ones did not fall until from ten to fifteen days. There was no scar, unless from scratching, with infection. The fever did not decline until the papules had ceased forming. There was no secondary fever, but rather a fall with the turbidity of the vesicle. An interesting symptom was enlargement and tenderness of the occipital glands, which was noted in sixteen out of twenty-nine cases. It sometimes lasted as long as three weeks.

The most useful differential diagnostic points were: Mild onset; absence of preliminary rash; rapid appearance of eruption; failure of temperature to decline with appearance of eruption; distribution of lesions; character of lesions; rapid vesiculation; successive crops of papules; absence of secondary fever; short course of disease.

Bourland notes that the concurrence of smallpox in no way caused the course of the varicella cases to depart from the typical one.

Vaccinated and unvaccinated children were equally susceptible, and the course the same in each class.

None of the cases were exposed to smallpox or had ever had it.

No adults were attacked, though many exposed were unvaccinated.

Previous attacks of chickenpox conferred immunity except in one case.

G. D.

SURGERY.

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HERNIA IN YOUNG CHILDREN.

William B. DeGarmo, M. D., of New York (*Medical Record*, February 13, 1904). The ages considered are from birth to the fourteenth year. About thirty-five per cent of all hernias occur in this period. Young children have hernia because of imperfect development. The descent of the testicle may be retarded or stopped, or the pouch of peritoneum which is brought down with it may not be obliterated, leaving the way clear for the formation of congenital hernia. This form of hernia rarely occurs after the fifth or sixth year, but has been observed by the writer as late as the twentieth year, most commonly appearing soon after the child begins to walk. Another common cause of hernia in childhood is constipation, the delicate tissues not being able to resist the strain.

Gastrointestinal diseases with the formation of much gas may produce the same result. Other common causes are coughing, crying and tight belly-bands. The forms of hernia occurring in children are inguinal, umbilical, ventral and femoral in the order named, the last being extremely rare. The symptoms are the same as in the adult, a visible tumor being usually the first indication. This may suddenly disappear to return again in a few days or weeks. The popular idea that a hernia is outgrown is a mistake and may prove a dangerous error.

Treatment contemplates the application of a truss at the earliest moment after the hernia is discovered. It rarely becomes strangulated beyond reduction. When strangulated or in danger of becoming so it should be operated upon at once. The prejudice against operating upon young children for the cure of hernia is rapidly growing less. Ninety per cent of all cases under three years can be cured by mechanical means. In one hundred seventy-nine cases under fourteen years, operated upon, there was not a single death or recurrence of the hernia. The principal objection raised to operation is the difficulty of maintaining asepsis. This, however, is easily done by sealing the wound with collodion and changing the dressings frequently.

The author enumerates the indications for operation as follows:

(1) When the hernia is strangulated.
(2) All cases not controlled by a truss.
(3) Occasional protrusion with threatened strangulation.
(4) When truss-wearing causes pain.
(5) On children who cannot be kept under regular observation.
(6) All cases of femoral hernia.
(7) On all children over seven years of age.

C. G. D.

GYNECOLOGY.

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.
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AND
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FIBROMA OF THE INTRAABDOMINAL PORTION OF THE ROUND LIGAMENT OF THE UTERUS.

In the *Journal of Obstetrics and Gynecology of the British Empire* for February, 1904, Doctor Herbert R. Spencer reports thirteen cases of fibroid of the intraabdominal portion of the round ligament, and adds his own case to these. In making a summary of his article, the above journal says:

The writer records a case of fibromyoma of the intraabdominal portion of the round ligament weighing six pounds, removed by abdominal myomectomy from a virgin twenty-four years old, who remains well after five years.

A consideration of the fact furnished by the fourteen cases shows that fibroids in this situation occur usually in women over forty, the writer's case being the youngest (twenty-four) and Winckel's the oldest (seventy-six).

The tumors are more frequent on the right side than on the left (nine to five); in one case, they were found in both ligaments, in another two tumors existed on one ligament.

They may occur in virgins; they do not tend to prevent pregnancy or to cause abortion. They do not influence menstruation, menorrhagia and dysmenorrhea, when present, being due to uterine fibroids which are associated in one-half the cases.

The tumors are subject to lymphangiectasis and to myxomatous and calcareous degeneration, and may cause trouble after the menopause.

They vary in size (from that of a nut to twelve kilograms), and may be pedunculated or sessile, intraperitoneal or subperitoneal.

The pedicle may be the ligament itself, which is hypertrophied, or there may be a separate pedicle attaching the tumor to the ligament. Torsion of the pedicle may occur.

Special symptoms due to the tumor are often not marked; abdominal pain and stiffness, pain on walking, sacral pains, intestinal pains, and pressure on the bladder have been met with. In the writer's case, the superficial abdominal reflex was much increased on the side of the tumor. Ascites is absent. The tumors, which vary in consistency, closely simulate ovarian, uterine and broad ligament growths.

The tumors should be removed as soon as they cause symptoms or attain any considerable size. The pedicle should be carefully tied, and, when possible, the ends of the ligament should be united. If a sac be left after enucleation, it should be closed by suture or drained.

Two cases died (of eleven operated on), that is, 18.18 per cent; but the fatal cases occurred twenty years ago.

OBSTETRICS.

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THE ETIOLOGY OF THE ISCHURIA IN RETROFLEXION OF THE GRAVID UTERUS.

Charles B. Reed (*American Journal of Obstetrics*, February, 1904) claims that while many explanations have been made to account for the retention of urine in cases of retroflexion of the gravid uterus, most of them fail to satisfy the conditions present and are open to very serious objections.

The assumption that the pressure of the displaced cervix forms a valve-like projection on the posterior wall of the bladder is indefensible, for it has been shown that in retroversion of the second degree, all of the conditions are present for the formation of such a valve without the occurrence of such retention. Such a condition would become obliterated in an enormous distention of the bladder, relieving the condition spontaneously. Such valve-like projections have never been demonstrated postmortem and the suddenness of the onset of ischuria could not be explained by the formation of a valve.

Kinking of the urethra cannot explain the condition, for, as the bladder became distended, the tension of the urethra and adjacent connective tissue would spontaneously tend to overcome the obstruction. A kink can only occur when the tube is long enough to become bent on itself, and in this case the tension would tend to prevent rather than favor kinking.

The tension has been urged as a cause of ischuria, elongating the urethra, reducing its calibre and finally obliterating the lumen. But the consequent trophic changes in the urethra, the temporary retraction of the os urethræ and the reduction in the size of the tube, which latter would be shown in the passage of a catheter, have not been observed.

The urethra is often lengthened in backward displacements and in normal pregnancies. It is capable of dilatation and considerable lengthening without perceptible diminution in its calibre. The irritation of the sensory nerves by traction would cause frequency of micturition, instead of ischuria. The elongation of the urethra is a result rather than a cause of the ischuria.

If direct pressure caused mechanical occlusion of the urethra and a resulting ischuria, the condition would be seen more frequently, in all cases of fibroids growing in the region of the cervix and in cysts of the ovaries prolapsed into the culdesac. Sufficient pressure to cause occlusion would result in painful micturition. Compression existing sufficiently long to mechanically close the canal would be followed by trophic disturbances and later by necrosis. Evidences of destruction of tissue would be present in these cases. If direct pressure were a cause of the ischuria, the wearing of improperly fitting pessaries would be responsible for many cases. This has not proven to be the case.

Retroversion may result from an enormously distended bladder, so it is necessary to consider some other condition in the pelvis. Cystoscopic examination has shown the bladder wall to be edematous, and the theory has been advanced that the ischuria results from the edema. It has not been proven that the edema has been present first and this theory would require a sudden onset of the edema. It is more probable that the edema is the result rather than the cause of the ischuria.

Interference with the functions of the nerve ganglia supplying motor and sensory filaments to the bladder wall can only explain the condition. The series of phenomena comprising micturition are inaugurated and executed by stimulation of nerves coming from the central and sympathetic nervous systems. The fibres and ganglion cells of the plexus from which the bladder wall receives its nerve supply are situated on both sides of the middle part of the rectum. Compression on these nerves and ganglia by the retroverted, growing uterus will cause a paralysis, and sudden retention of the urine. The sensory nerves being comparatively unaffected, the subjective symptoms increase with the enlargement of the bladder until they also are paralyzed. The time of appearance of the ischuria varies with the degree of displacement, being earliest where the position of the uterus first compresses the nerves.

A. P. R..

OPHTHALMOLOGY.

By WALTER ROBERT PARKER, B. S., M. D., DETROIT, MICHIGAN.
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BLASTOMYCOSIS OF THE OCULAR STRUCTURES, ESPECIALLY OF THE EYELIDS.

WOOD (*Annals of Ophthalmology,* January, 1904) reviews the reports of some thirty-five cases of blastomycetic lesions. T. C. Gilchrist was the first to recognize a distinct skin disease due to a yeast-like fungus. Doctor Wood notes that while perhaps an accident, it is worthy of note, that so far this condition is an American disease or its true character has been appreciated only by American surgeons. The following history of a case of blastomycosis of the left lower lid is given.

Mary R., aged fourteen, had never before suffered from an eruptive disease and there is no history or other evidence of syphilis or tuberculosis. Three months ago she noticed a small growth, like a stye, in the central margin of the left lower lid. This formed a scab which, when removed, left a raw discharging sore.

The growth is now about the shape and size of a large peanut, 27x5x7 millimeters long and 3 millimeters thick, with abrupt, rounded walls of apparently normal but reddened skin. At the intermarginal space the growth has destroyed the dermal edge and the conjunctiva is red and thickened. The surface of the tumor, as well as the margins, is uneven, exhibiting many openings, through which a whitish fluid discharges or can be squeezed. The tumor-mass is soft and compressiable and does not present the hardened, ulcerated nodules of epithelioma, or the half healed raw patches of dermal tuberculosis.

The *palpebral conjunctiva* is red, swollen, and granular, but there is no abrasion or other lesion of that membrane.

The *ocular conjunctiva* is injected for about three-quarters of its extent. The lower lid margin forms the upper wall of the tumor and at some points the latter overrides the conjunctiva. The mouths of the Meibomian ducts and the cilia follicles are invaded by the growth; but few lashes are to be seen. The cornea is clear, pupil reflexes normal, and vision nearly 6/6. There was a slight mucoid discharge, with some secretion remaining in the lower conjunctival sac. No pain;

some sensation of foreign body in the eye. There was no tumor or eruption elsewhere on the body.

On examination organisms proper to a blastomycetic dermatitis were found.

The patient was treated with large doses of potassic iodid internally and regular exposure of the growth to the Roentgen rays. The growth slowly decreased in size and has now almost disappeared.

The following histological report was also given:

"The section shows the lyptical lesions of blastomycosis. There is great and irregular proliferation of the epithelium, and the intervening connective tissue is infiltrated with various forms of cells, scattered among which are occasional giant cells. Here and there, but outside as well as in the epithelium, occur small aggregations of polymorphonuclear leukocytes—the so-called miliary abscess."

The author then gives the histories of eight other cases.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.

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SPECIAL INFLUENCES OF THE HIGH ALTITUDE ON THE NOSE AND THROAT.

S. Edwin Solly (*Journal of the American Medical Association,* November 14, 1903) says that patients arriving from sea level often complain of nasal symptoms of which they had not been conscious at home. These symptoms are due to the altitude which causes a marked reduction of atmospheric pressure on all parts of the body and consequently a greater fullness of the vessels of the skin and mucous membranes, which are exposed to the air. As a result there is a physiologic congestion of the blood-vessels of the nasal cavities, especially of the erectile tissue of the turbinals. The dry air causes the mucus to become inspissated, forming crusts on the surface, giving rise to further obstruction. With the dry air there is also dust which increase the inflammation. The rapid changes in the temperature between day and night, and between sunshine and shadow, are other factors. The author also calls attention to the increased activity of the nervous system incident to high altitude. Accessory sinus disease, if appropriately treated, heals more rapidly than at sea level. His conclusions are:

(1) Surgical measures are often demanded at an altitude in cases which had previously gotten along comfortably without it at sea level.

(2) The results of such procedure are at least as satisfactory as elsewhere, but more than usual care must be taken to save all secreting tissue.

(3) The local symptoms of atrophic rhinitis are aggravated, though the constitutional conditions are markedly improved.

(4) The moist form of hypertrophic rhinitis is much improved.

PSYCHIATRY.

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MEANS FOR ALLAYING EXCITEMENT IN INSANITY.

Harrington Sainsbury (*Journal of Mental Sciences,* January, 1904) gives a very interesting abstracted translation of an article by H. Pfister on "Die anwendung von Beruhigungsmitteln bei Giestes-kranken." In this short treatise the author deals with the various means at our disposal for combating the symptom excitement. His teaching will appeal more directly to those upon whom may be forced the thankless task of endeavoring to treat the mental case in a private dwelling. The first object to be attained is the removal of the exciting cause: as, for instance, when poison such as alcohol, lead, mercury, morphia, cocoaine, et cetera, underlie the manifestations. When an infection such as malaria, et cetera, or a neurosis as hysteria, is prominent in the case endeavor must be made to mitigate this. Most often the physician is compelled to treat the symptom excitement empirically. This empirical treatment he classifies as somatic and by special methods. Under somatic come general hydriatic and dietetic rules to be observed and stress is laid upon the importance of a full dietary and the necessity for forced alimentation in cases of refusal of food when excitement is prominent. If complete abstinence is suggested by the symptoms Professor Pfister urges not to delay the forced alimentation if the breath smells of acetone and this substance is found unmistakably in the urine. He says that forced alimentation must not be longer delayed than five days even when we have to deal with vigorous patients who are quite quiescent and take water. In weaker cases, and those in which excitement and unrest are prominent, delay must at the longest be but two or three days or even less should premonitory symptoms declare themselves. He describes the technique of forced alimentation by means of the tube. The nose is to be always chosen for its passage and that nostril selected through which the air passes most freely. The tube should be passed either just into the cardiac orifice or just above this into the lower end of the esophagus, either of which is preferable to passing deeper into the stomach. All kinds of liquid food may be administered but one and one-third pints of milk, three beaten eggs and five ounces of sugar given twice a day, or in exceptional cases thrice daily, will suffice during months or even as long as a year to maintain a patient's strength. To this, water, lemon juice, alcohol or medicine may be added according to indications.

The nutritive injection is next discussed and it is advised that it should be of thickish consistency, not to exceed nine ounces in bulk and repeated not oftener than two to four times in twenty-four hours. Sainsbury regards this more reasonable in bulk than that often recommended. He does not approve Professor Pfister's dictum concerning subcutaneous alimentation.

The value of rest, particularly in bed, of warmth and the hydropathic methods including prolonged and continuous bathing and the wet pack precede, in the author's estimation, the consideration of drug treatment. Under this latter head Pfister cautions the use of opium with mental patients suffering from heart or kidney disease. With this statement Sainsbury does not agree. Among drugs Doctor Pfister prefers hyoscin to nearly all other sedatives and says it may be given by the mouth but is better injected subcutaneously in the dose of one one-hundred-fiftieth to one-seventy-fifth of a grain. The combination of one-seventh of a grain of morphia with this is recommended in cases wherein dread or apprehension characterizes the excitement. Paraldehyd is preferred to all other soporifics not only on account of its absolute safety but because there is no contraindication with the exception of the severest forms of stomach disease. Dormiol, hedonal, amylene hydrate, chloral hydrate, sulfonal and trional are mentioned.

THERAPEUTICS.

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SUBSTITUTE FOR QUININ IN THE TREATMENT OF MALARIAL FEVER.

JOHN T. MOORE, M. D., of Galveston, Texas, contributed to a symposium upon the treatment of remittent and intermittent and malarial fevers, which appeared in the January number of the *Therapeutic Gazette,* a most interesting article on the use of methylene blue in the treatment of malarial fever. At the beginning of his article, the doctor hastens to say that he considers quinin a specific drug in its action upon the plasmodium of malaria, and that the instances are few where a substitute for this drug is called for. But should such substitute be called for Doctor Moore knows of but one drug in addition to quinin, which possesses a distinct parasiticidal action upon the plasmodium. This drug is methylene blue. There are other drugs, however, which time has shown to be valuable in the treatment of malaria, but all these owe their good effects to some action not parasiticidal. Arsenic is the chief of these.

Guttman and Ehrlich, in 1891-1892, were the first to use methylene blue for the purpose above indicated. They were led to do this because they had observed that in fresh blood methylene blue not only stained the parasites but rapidly destroyed their movement.

Guttman and Ehrlich successfully treated several cases by means of the methylene blue and later other observers reported favorable results from its use.

In 1902, Doctor Allison and Doctor Moore, working together, studied twenty cases of malaria in which cases quinin and methylene blue were given alternately. Their conclusions were as follows:

"(1) Methylene blue will destroy malarial parasites in many cases, but is less certain than quinin.

"(2) Methylene blue is probably most valuable in chronic cases, but has no advantage over quinin.

"(3) The effects of methylene blue are ordinarily more unpleasant than quinin.

"(4) It is useful in cases that cannot take quinin on account of some idiosyncrasy to it. Its use in cases of pregnancy is undetermined.

"(5) It is probably valuable in treating hematuric and hemoglobinuric fevers on account of its diuretic action; this has yet to be determined. We have had no chance to test its use in such cases.

"(6) We believe that quinin is quicker and much more certain, and would rely upon it rather than upon methylene blue.

"Where there is a known idiosyncrasy to quinin, methylene blue, medicinally pure, should be given in doses of three to five grains every four to six hours, in a capsule, combined with one to two grains of powdered nutmeg. Ordinarily there will be no unpleasant features, but in some cases there is a burning on micturition, and now and then nausea and headache."

Doctor Moore says that in neuralgias, especially those of malarial origin, methylene blue is very valuable and that in cases of neuritis (supposedly of malarial origin) it would act well.

PATHOLOGY.

By ALDRED SCOTT WARTHIN, Ph. D., M. D., Ann Arbor, Michigan.
PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF MICHIGAN AND
DIRECTOR OF THE PATHOLOGICAL LABORATORY.

PATHOLOGICAL ANATOMY OF PARATYPHOID FEVER.

H. G. Wells and L. O. Scott (*The Journal of Infectious Diseases*, January, 1904). That there exists a distinct class of typhoid-like diseases due to organisms intermediate between the typhoid and the colon bacillus has been demonstrated beyond doubt during the last several years. This important advance in our knowledge concerning the febrile diseases we owe to refinements in the technique of the clinical application of the agglutination reactions and the more frequent application of cultural investigation in the diagnosis of such diseases. For the febrile conditions thus separated from true typhoid the terms "paratyphoid" and "paracolon" have been used at random and the following classification has therefore been suggested based upon the scheme given by Buxton:

Paracolon Infections.—Not characterized by typhoidal symptoms. Due to a group of organisms containing many members but which are culturally alike.

Paratyphoid Infections.—Characterized by typhoidal symptoms. Due to (*A*) a distinct species culturally unlike the paracolons; (*B*) a distinct species culturally resembling the paracolons.

The same organism may be responsible in each case; therefore, if the term paratyphoid is applied clinically only to those cases resembling typhoid, the others being designated as paracolon infections, the situation will not be at all different from what it now is in relation to infections with the Eberth bacillus.

Since the cases of paratyphoid fever are as a rule less severe than those caused by the true typhoid bacillus little has been learned about the pathological anatomy of this condition. Up to the present time only four cases with autopsy have been reported. To these Wells and Scott add a fifth one carefully studied. From these five cases, therefore, it may be considered that enough material has been collected to permit of some conclusions as to the pathologic anatomy of paratyphoid fever, inasmuch as these cases correspond fairly well with one another and present a distinct picture. The summary of the changes produced by these five cases shows that paratyphoid fever is pathologically quite different from typhoid fever, but on the other hand presents few anatomical characteristics distinguishing it from other septicemias howevermuch it may differ clinically from them. The most constant change is the splenic enlargement which was present in all five cases. This enlargement appears to be identical with that found in typhoid or ordinary septicemia. The occurrence of hemolysis is shown by the loading of the splenic endothelial cells with pigment and red blood cells. The intestinal lesions are quite variable. In three cases ulcers were found but these resembled those of dysentery rather than of typhoid. No changes were found in any of the cases either in Peyer's patches or the solitary follicles. The mesenteric glands are but little affected. In one case they were swollen. Focal necroses were found in the liver in two cases but differed from those of typhoid in not containing endothelial cells. Other changes of importance were not found.

The anatomical changes appear to be therefore simply those of a septicema with splenic swelling and occasionally nonspecific ulcerations in the intestine. It is therefore not improbable that some of the cases of "typhoid without intestinal lesions" were in reality cases of paratyphoid. The proliferation and phagocytosis seen in typhoid are almost entirely absent in the intestinal lesions when ulcers exist and are very slight in the mesenteric glands. The fact that the solitary follicles and Peyer's patches were not involved in any of the five cases suggests some essential though obscure biologic difference between the typhoid and paratyphoid organisms. The slight alterations found in the intestines agree with the clinical picture, diarrhea being recorded in but eighteen per cent of the reported cases. Hæmorrhage was present in but five per cent. It is therefore probable that intestinal lesions may be less frequent in the nonfatal cases, since the autopsy cases must represent especially severe types of the disease. It is very probable that fatal cases of paratyphoid are rarities. Lucksch found only one paratyphoid case among one hundred two autopsies of typhoid cases. The geographical occurrence of the five autopsy cases (Santa Cruz, Bohemia, Roumania, Philadelphia and Chicago) would indicate that the distribution of the paratyphoid bacillus is as wide as that of the typhoid bacillus.

EDITORIAL COMMENT.

A MEDICAL NESTOR CHERISHED IN MEMORY.

THE countenance reproduced in the frontispiece which adorns this number will be recognized not only by many physicians throughout the United States, but by medical graduates universally who have gone forth from the University of Michigan during the past thirty years. An important feature which has received the commendation of the constituency represented by this journal is the publication from time to time of papers recounting the labors of distinguished physicians in behalf of medical science. Thus narratives respecting the work of Beaumont, McDowell, and Jackson have appeared in these pages within the past two years, and have elicited merited attention from American and foreign medical journals, some even publishing the material in abstract form and illustrating the text with the original photoengravings, a compliment evincing the interest which these stories excite.

* * *

There is a custom in vogue at the University of Michigan which contemplates honoring the memory of teachers who have established departments in this institution, Founders' Day being appointed for the purpose. Doctor George E. Frothingham, founder of the department of ophthalmology, was the subject of memorial exercises on the occasion of this annual event, February 22, 1904. The exercises consisted of addresses, interspersed with vocal and instrumental selections, and a finale of refreshments. The president of the senior medical class delivered the introductory address and announced the principal speaker of the evening, Doctor Flemming Carrow, professor of ophthalmology in the medical department, who treated the audience to an interesting discourse on "George Edward Frothingham, M. D.," which appears in this issue. Doctor Victor C. Vaughan, dean of the medical department, delivered the third address, which was reminiscent of a quarter century acquaintance with the deceased ophthalmologist, and afterward unveiled a life-size portrait of Doctor Frothingham, which had been presented to the University by his family.

* * *

The service of Frothingham in the cause of medical science is vividly portrayed by the orator, and consequently no attempt will be made here to expatiate on the praiseworthy deeds of the departed physician. It is more especially for the purpose of directing attention to the concluding words in an address delivered by the doctor before the Senior Medical Lyceum in 1875, and just brought to notice while rummaging a collection of pamphlets, that these prefatory remarks are intended. The quotation, which deserves wider publicity than that accorded its original form of presentation, is as follows: "But a little while and it will be over; our brief lives will have ended and we shall be at rest.

For a little while we may be spoken of, but the great army of workers must press on, and in the great battle of life our names and our labors will be forgotten! But if we have lived lives of purity, and of devotion to our professional duties, if we battle nobly for, and leave our profession a position worthy the talent of the coming generation, other and better men will fill our places, and our influence will live while we lie forgotten in the grave. Professionally then, let each so live 'that though all the actions of his daily life be scanned with all the industrious malice of a foe, nothing shall reward the search but deeds of honor.' "

MEDICAL NEWS.

EAT TO LIVE, OR LIVE TO EAT?

Doctor John J. Mulheron, of Detroit, recently delivered an address before the men's class of the Simpson Methodist Episcopal church, during which he declared that man should live one hundred years, barring hereditary frailties. The doctor's theory of longevity is based upon analogy. The life of a lower animal is five times as long as its period of growth. For instance, the horse attains his full growth in four years and lives twenty years; the elephant in twenty years and lives one hundred years. Overeating was cited as one of the chief causes of early death. A person who has attained the age of twenty-five years should not indulge in three full meals a day. "The human body normally starts out freighted for one hundred years, and it is man's own violation of the laws of nature that causes premature death. I do not believe that disease is ordained of God. When man learns to obey nature, then he will pass away at the end of his century like the famous one-horse shay. The Roman Catholic church prescribes rules of fasting during lent. It allows one full meal and two light repasts each day. That the hygiene is excellent is beyond dispute, and the only quarrel we physicians have about the matter is, that the rule affects but one church, and that for only six weeks in the year."

MINOR INTELLIGENCE.

Doctor John L. Burkart, of Grand Rapids, Contract Surgeon in the United States Army, was recently ordered to the Philippine Islands for duty.

Fourteen typhoid fever patients in Denver are thought to have been infected through the unclean milk cans of a dairyman who used the cans on his homeward trip to carry garbage to his stock.

Watertown, New York, is suffering from an epidemic of typhoid fever, which at the present time shows no signs of abating. The already large number of cases is being increased daily by several new ones.

DOCTOR WALTER F. LANGRILL, health officer of Hamilton, Ontario, has been appointed medical superintendent of the Hamilton City Hospital, at a salary of $1,800 per year. The position was formerly held by Doctor McLaren, who lately resigned.

THE will of the late Mrs. Elizabeth W. Aldrich, of New York, bequeathes ten thousand dollars to Saint Luke's Hospital, ten thousand dollars to the Home for Incurables, and twenty-five hundred dollars to Saint Mary's Free Hospital, institutions of that city.

STATISTICS compiled by the secretary of the Minnesota State Board of Health show that pneumonia as a cause of death in that state has enjoyed a steady increase for several years, while the mortality rate from tuberculosis has remained almost unvariable.

ON December 17, the Medical Society of City Hospital Alumni of Saint Louis elected the following officers: President, Doctor Charles Shattinger; vicepresident, Doctor Walter Baumgarten; secretary, Doctor R. E. Kane; treasurer, Doctor Hudson Talbott.

MEMBERS of three medical schools—regular, homeopathic, and eclectic—will be represented on the Health Board of San Francisco, and Mayor Schmitz has accorded the use of the city hospitals for teaching purposes to all recognized schools of medicine.

THE first annual meeting of the German Society for the Repression of Quackery was held recently. The need of such a society in Germany is appreciated when the fact is considered that since 1870 the increase in the number of charlatans in Berlin alone has been 1,600 per cent.

THE hospital on the World's Fair grounds, in which will be treated the sick and injured during the progress of the exposition, is nearing completion. The structure is 108x109 feet in dimensions, and will contain, besides operating rooms, a dormitory for matrons and nurses.

DOCTOR WALTER R. PARKER, a well-known oculist of Detroit, and in charge of the department of "Ophthalmology" in this journal, has suddenly been called to Hong Kong, China, to attend his friend, Mr. Nichols, who is suffering from a severe inflammation of the eye, which threatens his eyesight. Doctor Parker sailed February 22, on the Empress of China. He will return in May.

A PRACTICE has been adopted at the prison in Stillwater, Minnesota, which should become vogue in every penal institution in the country. The convicts who are threatened with tuberculosis, or who are already sufferers from the disease, are separated from other prisoners and given outdoor employment in order that they may have a fair chance of overcoming the malady.

POLISH physicians and scientists will convene in tenth quadrennial congress in Lemberg, Austria, July 20, and continue their sessions four days. Professor E. Mechek is the chairman of the Committee of Arrangements and Professor W. Sieradzki is secretary. The representative of the committee for the United States is Doctor Francis E. Tronczak, of Buffalo, New York.

A CHICAGO physician is being sued by a former patient for $25,000 damages, claiming to have sustained an injury of his face from an *x*-ray burn. The patient declares that he is now unable to raise a beard on the parts affected, whereas before the accident he had a luxuriant growth.

DOCTOR NICHOLAS SENN, the noted surgeon of Chicago, is awaiting a call to assume charge of the surgical corps of the Mikâdo's army. The appointment, if received, will undoubtedly be obtained through friendships established while the doctor was visiting Japan several years ago.

THE political contest in Ohio last fall resulted in the following physicians being elected to the state legislature: J. G. Carson, A. J. Crawford, M. M. Carrothers, C. D. Watkins, J. H. Criswell, Errett Le Fever, E. B. Harper, P. M. Wagner, O. H. Nihart, Y. Stephenson, J. E. Miller.

ONE hundred children were excluded from the schools of the city of New York on the day of opening as a result of the medical inspection of pupils. Trachoma, conjunctivitis, parasitic and skin diseases and tonsillitis, in the order named, were the chief ailments diagnosed in the debarred pupils.

A DINNER was given at Delmonico's, New York City, Tuesday evening, March 1, 1904, in honor of Doctor D. B. St. John Roosa and to commemorate the twenty-one years since the inauguration of post-graduate medical instruction in this country. Doctor William Osler, of Baltimore, presided. The price of the dinner was ten dollars per plate.

DOCTOR FREDERICK W. ROGERS, of Jackson, Michigan, recently read a paper, entitled "Conservative Gynecology," before the Jackson County Medical Society. Professor Reuben Peterson, of Ann Arbor, conducted a clinic at the same meeting, and Doctors Martha C. Strong and R. Grace Hendrick tendered a reception to the doctors and their wives.

DOCTOR ARTHUR D. HOLMES, who has charge of the department of "Pediatrics" in this journal, is spending a year abroad. He sailed for Naples on January 23, intending to proceed north to Vienna and then to Berlin, at which medical centers he will attend the clinics of the leading specialists in his line, subsequently spending a considerable time at Babinski's pediatric clinic in Paris. Prior to his departure from New York he pursued a course of instruction under Kerley.

THE Clinical Society of the Hospital of the University of Michigan, at its annual meeting February 24, 1904, elected the following officers for the ensuing year: President, Doctor Charles L. Patton; secretary-treasurer, Doctor John H. Gilpin. A clinical program was a feature of the occasion. Arrangements were made for stenographic reports of succeeding meetings for publication in The Physician and Surgeon. After adjournment the society was entertained in the Gynecological staff room by Doctor Peterson.

DOCTOR E. A. DE SCHWEINITZ died in Washington, District of Columbia, February 15, 1904. He was chief of division in the Agricultural Department. The doctor was born in Salem, North Carolina, January 18, 1866, and graduated from the university of his native state. Subsequently he received the degree of Ph.D. from Göttingen, and M. D. from Columbian University, in which latter institution he has been dean of the medical department for several years. He was a chemist of wide repute and had published a number of valuable papers on bacteriological topics.

THE Technology Club, of New York, which is composed of alumni of the Massachusetts Institute of Technology, indulged in an annual dinner on the 5th ultimo, one of the beverages of which was "liquid sunshine," prepared under the direction of Doctor William J. Morton. Each guest was supplied with a glass of water containing a small quantity of esculin and into this was dropped a capsule rendered radioactive by exposure to radium. The diners were assured that their interiors were thoroughly illuminated after drinking the liquid, although they did not appear transparent on the surface.

THE twenty-fifth anniversary of the first demonstration of the cystoscope by Professor Max Nitze was celebrated on the 9th instant. Professor Carl Posner, Doctor Hans R. Wossidlo, and Doctor H. Goldschmidt, of Berlin, comprised the committee of arrangements. A feature of the occasion was the presentation of an address bearing the signatures of physicians having a general or special interest in genito-urinary diseases. Doctor Ferdinand Valentine, of New York, represented the committee in the United States, and procured the signatures of colleagues desiring representation in the address. The names were preceded by the following congratulatory cablegram to the demonstrator: "Your colleagues and pupils congratulate themselves and the profession on the twenty-fifth anniversary of the demonstration of the cystoscope. Vivat Magister!"

RECENT LITERATURE.

REVIEWS.

PHYSICAL CHEMISTRY IN THE SERVICE OF THE SCIENCES.*

FOR the publication of these lectures not only chemists but all interested in the advancement of science will be deeply grateful. Professor van't Hoff is one of the most brilliant of present-day thinkers, and the originator of the theory explaining the space relations of atoms in molecules. The lectures contained in the present volume present in clear and lucid language the gist of the new science of physical chemistry which has come into existence in the last fifteen years. The relations of physical chemistry to pure chemistry, to industrial chemistry, physiology and geology are discussed in a most suggestive manner; the theory of ionization is forcibly illustrated and the great possibilities of its application in medicine and physiology are pointed out. To the progressive student of science this little book, containing as it does in a nutshell the essence of modern physical chemistry, is invaluable.

*By Jacobus H. van't Hoff, Professor Ordinarius of the University of Berlin; Special Lecturer on Physical Chemistry. English version by Alexander Smith of the Department of Chemistry in the University of Chicago. The Decennial Publications of the University of Chicago, Second Series, Volume XVIII. 150 pages, cloth, royal 8vo; net $1.50; postpaid, $1.60. The University of Chicago Press, Chicago, Illinois.

THE ESSENTIALS OF HISTOLOGY.*

As an elementary text-book of "Histology" the sixth edition of Schäfer's work leaves little to be desired. The clear and concise style, the well-chosen matter, the numerous and excellent illustrations combine to make this work the very best text-book that can be placed in the hands of undergraduate students. The contents are brought up to date, and the book is one of the few histological text-books that mentions the hemolymph nodes. Other lines of recent histological research are also noted. The size of the book is very convenient. It may be strongly recommended.

*Descriptive and Practical, for the Use of Students. By E. A. Schäfer, LL. D., F. R. S., Professor of Physiology in the University of Edinburgh. Sixth edition, revised and enlarged, with 463 illustrations. 416 pages. Lea Brothers & Company, Philadelphia and New York. Price $3.00.

CHRONIC HEADACHE AND ITS TREATMENT BY MASSAGE.*

In this little pamphlet of some sixty pages, the author gives his theory and the results of treatment by massage of what is ordinarily spoken of as migraine. He finds that there are two varieties of headache: affections of the cranium in which the pain consists of two elements, one continuous and the other paroxysmal; second, headaches accompanied by alterations in the muscles of the neck and scalp, swellings along nerve trunks and chronic enlargement of certain lymphatic ganglia of the neck. The author claims that if the causes of headache be looked into and massage applied according to his instructions published elsewhere that in many cases a cure will result. Migraine is such a common and above all obstinate disease and so difficult to control by ordinary therapeutic measures that it would seem advisable to give massage a thorough trial. Certainly if we are to believe his reported cases, it has worked well in the author's hands.

*By Gustav Norstrom, M. D., of the Faculty of Stockholm. Published by G. Stechert, New York and London, 1903.

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ORIGINAL ARTICLES.

MEMOIRS.

CYSTITIS.*

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IN considering this subject at this time we shall use the old classification of the disease into the two clinical forms—acute and chronic—and under these heads make reference to special pathological facts.

In the first place it may be stated as a generally accepted fact that true inflammation of the bladder is associated with and caused by the action of bacteria on the tissues of the bladder. This view conforms with the known causes of inflammation in other tissues in other parts of the body and is demonstrable in a large percentage of cases. In some cases of the disease in which exposure to cold, gout and "irritating urine" so-called, are regarded as having some etiological relation, infection has been shown to exist; so that the inference is that true cystitis is practically always of microbic origin.

In making the above statement we do not forget that cases of so-called irritable bladder do exist. Temporarily changed conditions of the urine depending upon constitutional disturbances as in fevers, gout, et cetera, may result in what has been denominated an aseptic cystitis. Again, mild, transient forms of irritable bladder have been shown to be associated with vesical hyperemia, which in turn seems dependent upon some external condition. An example of this may be seen in hyperemia of the base of the bladder, distinguished by the aid of the cystoscope, and associated with other pelvic disease, as the presence of exudates. These conditions of irritable bladder are often spoken of as cases of cystitis, but the presence of the true inflammatory process is doubtful.

While it is maintained that cystitis is of microbic origin, it is nevertheless true that bacteria may be present in the bladder without setting up the inflammatory process. Such is the case in what has been called bacteriuria, in which bacteria have undoubtedly been present in the urine for long periods without causing any appreciable disturbance within the bladder. Cultures of virulent bacteria introduced into normal bladders do not invariably produce cystitis, showing that the bladder is not normally susceptible to infection. Again, we know that germs are constantly being eliminated by the bladder in cases of typhoid fever, and presumably in other febrile affections of microbic origin, and yet how infrequently does infection from this source result. These facts are by no means at variance with similar conditions in other parts of the body, but they are both interesting and of practical importance in dealing with this disease.

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*Read at the Port Huron meeting of the NORTHEASTERN DISTRICT MEDICAL SOCIETY of Michigan.

From the foregoing facts it follows that *predisposing* causes *also* are usually essential to the inauguration of cystitis. There must have been some pathological change whereby the tissues have become that kind of soil on which germs grow. These changes are various. They may consist of tumors growing outside of the bladder, the pregnant uterus, impacted feces, or any other external agent by which retention of urine is caused or hyperemia of the bladder is produced. Tumors growing within the bladder, calculi or other foreign bodies and urethral stricture may effect like results and provoke even greater changes in the bladder wall. The normal resistance of the tissues is thereby reduced and both they and the urine become nutrient media for the development of microbes. It is not improbable also that the elimination through the bladder of irritating drugs such as cantharides and turpentine and the presence of urine modified in the course of certain diseases as diabetes and after long continued use of stimulating foods and drinks, may effect such changes in the mucous membrane of the bladder as to favor the implantation of germs.

Retention of urine is undoubtedly the most frequent predisposing cause of cystitis. The urine itself becomes changed during the period of retention, the mucous membrane loses its normal resistance on account of the long-continued excessive pressure, and both become prey readily to the omnipresent germ. If not already present it is very often transported by the catheter or other instrument of relief. This has become a hackneyed subject, and yet our failures excuse repeated reference to it. It is a matter of experience that the cleansing of the meatus as well as the hands of the nurse and the catheter is indicated in many cases. As an instrument of precaution, Rosenstein has devised a double catheter, one portion of which, the outer, is inserted into the outer two-thirds of the urethra, while the other is passed through it into the bladder itself, and does not come in contact with the anterior urethra.

According to Cabot "the bacteria most commonly found in cystitis are: (1) The group of bacteria of which the bacillus coli communis is the type and which are found in more than one-half of all cases of cystitis; (2) the proteus vulgaris of Hauser, a common intestinal parasite; (3) the staphylococcus aureus, albus and citreus; (4) the streptococcus pyogenes; (5) the tubercle bacillus."

"All of the above-mentioned bacteria are capable, under favorable circumstances, of decomposing urea, but the colon group and the tubercle bacilli do so much less rapidly, and in the cases in which they occur the urine is more likely to be found acid."

Bacteria reach the bladder by the following routes: "(1) By the urine from the kidneys; (2) through the urethra on instruments; (3) through the blood; (4) from the rectum and sigmoid flexure, either by passing through the peritoneum or through retroperitoneal lymphatics; (5) by direct extension from adjoining areas of suppuration, for example, infected urethra, prostate, or pelvic abscess."

The treatment of cystitis will depend upon its acute or chronic character and the nature of the predisposing cause. Acute cystitis demands absolute rest in bed. All stimulating foods and drinks should for the time be avoided. The diet should be of the simplest kind. Water and milk in large quantities are beneficial for their diuretic effect. Hot applications over the hypogastrium and perineum are usually gratefully borne. Opium or morphin, hyoscyamus and belladonna may be indicated to secure comfort from pain and to control spasmodic action of the bladder. Other medicinal treatment should be directed to changing the reaction of the urine so as to inhibit bacterial growth. If the urine be ammoniacal, boric acid and benzoate of sodium will exert a favorable action in this direction. Salol and urotropin are eliminated with the urine and should directly check microbic infection. The vegetable diuretics seem to have fallen out of use. I do, however, frequently prescribe the fluid extract of buchu, as I believe, with good effect. Instrumental treatment is usually contraindicated in acute cystitis unless there be retention of urine. If a constitutional predisposing cause exist it should receive appropriate consideration. However, unless demanded by the emergency of the case all operative interference to correct the existing predisposing cause, should there be any, should be deferred until the more acute symptoms have passed. If there be no serious complication acute cystitis will, within two or three weeks, usually either subside or pass into the subacute or chronic form.

The treatment of chronic cystitis is more varied and difficult. It involves a more careful consideration of the patient's general condition, an examination of the urine and of the bladder both within and without. The color, reaction, specific gravity and character and sources of the abnormal constituents of the urine will often indicate the peculiar pathological condition and the proper method of treatment. For instance, the variety of epithelium found would indicate the layer of the bladder wall to which the disease had extended. Fragments of tissue separate or encased in a blood clot may suggest the character of the affection, whether inflammatory or otherwise. Again, tubercle bacilli may be contained in such cast-off material, the discovery of which would point to the real cause of the disease.

For the thorough and up-to-date examination of the interior of the bladder the cystoscope is an important and in many instances a necessary aid. Direct inspection of the bladder by Kelly's postural method is a long step in advance of the previous methods of examination. Personally I am more familiar with and favor the use of the electric cystoscope. Fortunately the best in the market can now be obtained easily as they are manufactured in this country. It is possible with experience in the use of this instrument, to diagnose catarrhal, ulcerative and hemorrhagic conditions and determine their severity and extent, the presence and somewhat of the character of tumors and prostatic enlargements projecting within the bladder, calculi and other foreign bodies, pouches and vesicorectal and vesicovaginal fistulæ. Irrigations may be practiced in the course of the cystoscopic examination and through the same instrument local treatment may be administered to diseased areas.

As has already been suggested the curative treatment of cystitis involves the correction of the predisposing cause. This may mean the removal of calculi or other foreign bodies or tumors within the bladder, the cure of urethral stricture, hemorrhoids, or any other condition causative of vesical hyperemia. We shall pass over any other reference to these operations.

Nothing more can be obtained by internal medication than has already been suggested.

Irrigation of the bladder is decidedly beneficial in many cases. It may be practiced by Kelly's method, using a glass catheter and a glass funnel at either end of a piece of rubber tubing, filling and emptying the bladder after the manner of gastric lavage. Continuous irrigation may be practiced by the aid of a double-current catheter. For the purpose of washing out debris a larger tube or speculum may be used, through which the injection may be thrown in by means of a smaller nozzle. In carrying out any of these methods, solutions of bichlorid of mercury in the strength of one to five thousand, permanganate of potassium one to two thousand, nitrate of silver one to two thousand, or in small amounts even stronger, boric acid one to fifty, or normal saline may be used as seems indicated. For mixed infections of the bladder solutions of bichlorid and permanganate will give best results. Nitrate of silver is adapted to ulcerations of the bladder wall. Recently I have used with good results solutions of formaldehyd one to one thousand to one to five hundred.

Direct medication may be administered locally through the cystoscope or speculum.

When there ceases to operate any predisposing cause and other methods of treatment heretofore mentioned fail there remains the method of drainage of the bladder, by which perfect rest is obtainable. In the male this is accomplished through either the perineum or hypogastrium, but preference is generally given to the former route as offering more direct drainage and less probability of sepsis. In the female a button-hole incision is made in the vesicovaginal wall and a self-retaining drainage tube is introduced. To this may be connected a piece of rubber tubing, the distal end of which is inserted into a jar, into which the urine is collected, or in suitable cases a urinal may be worn and the patient not be obliged to remain in bed. I have one such case under treatment at present, a lady who from a bedridden condition has become able to do her own housekeeping and in the course of a few months has gained forty to fifty pounds. Her general condition is most markedly improved. With the urinal she is very comfortable, but without it she is still even after several months unable to retain her urine longer than two hours. Sometimes she is obliged to urinate within thirty minutes. She would not exchange her present condition of wearing the urinal, for the painful and septic condition in which she formerly was, but I am still hopeful of closing the fistula. Ordinarily they may be closed within a few weeks.

REFRACTION AND THE USE OF MYDRIATICS.*

By LOUIS J. GOUX, M. D., DETROIT, MICHIGAN.

WITH the great advance which has been made in recent years in the many fields of science and industry, we find that mechanical contrivances designed to supplant older methods in the science of refraction have keep fully abreast with the moving spirit of the age.

Were one to attempt to carry in his armamentarium all the devices designed to make refraction simple and easy, and quickly done, our patient, and possibly the refractionist, would be well nigh exhausted, almost before the examination could be said to be fairly begun. Arguments are presented to show the superior features of each new device over that possessed by other methods, and especially over other mechanical devices. Finally a sense of confusion possesses us and in desperation we are apt to either condemn the whole outfit as a delusion and a snare, or else, in our bewilderment we may discover that the manufacturer is in possession of some of our hard earned plunks, while we have an instrument which perhaps looks well in our office and which may be of some value from a psychological standpoint, but which, inwardly, we feel is entitled to a place in the junk heap.

Were the construction of the human eye based on a fixed and uniform standard, always conforming to a specific systematic arrangement, then would our instruments of precision become invaluable in detecting any deviation from the normal or required standard.

It is not the purpose of this paper to belittle the value of objective methods of examination. They have their places as aids to diagnosis, but when it comes to the prescribing of glasses the trial case and test type must be the foundation of all successful work.

I wish to speak particularly of the use of mydriatics, and their value. While it must be conceded that a minor precentage of cases presenting themselves for refraction can be satisfactorily equipped with glasses without the use of mydriatic, still experience teaches that in a majority of the cases the results are more satisfactory when it is used and some cases simply cannot be given satisfaction until thorough mydriasis has been established.

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* Read before the DETROIT OPHTHALMIC AND OTOLOGIC CLUB.

The degree of refractive error seems to furnish no criterion for judging of the necessity of employing any of these agents. Writers of text-books, however, seem to agree that the smaller errors are usually the more difficult to refract and that it is often in these cases that mydriatrics are of the most value. Indeed we find that many of these cases of low refractive error are associated with the graver neuroses, the part they play being due to the fact that the refractive error is so slight that by strain of the ciliary muscles normal vision can be produced, while in the larger degrees of error no compensation is attempted.

Since innervation of the muscles of accommodation and convergence have a common source, and since in the emmetropic eye there exists a harmonious relation between these functions, it is plain that any form of ametropia must introduce a disturbance between these functions calculated to produce the characteristic train of asthenopic symptoms following.

For instance in the hypermetrope we have a demand for excessive accommodation with the resulting increase of innervation to the muscles of convergence. This means not only difficult binocular vision but there is also the unfortunate waste of energy which certain nervous patients cannot afford to lose.

Then in the case of myopia the reverse is true, a constant demand for more convergence with suppression of the accommodation.

Within certain limits many patients can tolerate or adjust themselves to slight modifications in the relationship of these two functions, but this will depend largely upon general health, occupation and environment. As a rule with the gradually diminishing range of accommodation and an excessive demand upon these functions, the struggle to maintain binocular vision becomes more and more difficult and the asthenopic symptoms with possibly pathological changes in the fundus becomes more manifest.

In cases where for years the abnormal relation between accommodation and convergence has been involuntarily controlled, we find that the habit is not easily broken up and that in nonmydriatic examinations a readjustment is not only frequently impossible, but even when a transient mydriatic has been used patients may complain of feeling more uncomfortable than before correction was attempted.

Many of our hypermetropes will obtain great relief from a partial correction only to return in the course of a few weeks or months in need of stronger glasses after acquiring a new relation between accommodation and convergence. We have all had the experience of finding patients in possession of concave glasses who should have been wearing hyperopic correction as demonstrated by test under cycloplegic. With nonmydriatic methods such patients may reject all glasses or the selection made today will be rejected tomorrow or as is often found they may select minus lenses.

While the above experience is true of low degrees of hyperopia or hyperopic astigmatism, the same holds good of larger degrees, the patients accepting correction for so small a percentage of the total defect that the asthenopic symptoms show but little or no improvement.

While the test with a transient mydriatic will in the large majority of cases prove satisfactory, in many others it will prove of not much more value than the nonmydriatic methods. It is in these cases of exaggerated asthenopia, with muscular anomalies and congested choroids, that the employment of a strong mydriatic is absolutely essential to satisfactory work. The same is true of those cases of ametropia in which there has been a readjustment in the relation between accommodation and convergence, and which acts as an obstacle to the wearing of the proper correction. The comfort experienced as a result of the physiological action of the drug on the muscles of the eye is not due to the cycloplegic action only but largely to the sedative action in allaying the nervous irritability and restoring the fluffy choroid to its normal vascular condition.

It is the impression of the writer that if in these cases of exaggerated asthenopia we would make more common use of the stronger mydriatics mutual satisfaction would accrue to both patient and physician. Patients would not then lay aside the glasses after a ten-minute trial, declaring them a misfit. There would be less traveling around from one ophthalmologist to another and we would have the satisfaction not only of knowing the full amount of refractive error, but also of eliminating the possibility of there being a general disease or a neurasthenic condition causing the asthenopic symptoms.

The last named conclusions could be drawn providing the asthenopic symptoms were found to be way out of proportion to the amount of refractive error and especially if no relief or only insignificant relief follows the wearing of the proper correction.

Eliminating the possibility of constitutional origin of the asthenopic symptoms I consider of as much importance as the accurate measurement of the refractive error and this requires first complete paralysis of the ciliary muscle to enable us to ascertain the full amount of ametropia that we may correct it or else to assure ourselves that no anomaly of vision exists. Should we find transient imbalance of the extraneous muscle with no refractive error it would be fair to assume that the heterophoria is of central origin and only a local manifestation of some general disease.

Objective and subjective methods alone in any case cannot give us the absolute certainty of diagnosis which we possess and feel when a thorough mydriasis is used in conjunction with these methods.

My summary is that whatsoever may be our methods of refraction, mydriasis should be employed in all cases under the age of forty. That while transient mydriasis is sufficient in the large majority of cases those of exaggerated asthenopia should be given a course of thorough mydriasis for its sedative effect as well as to make possible an accurate measurement of the ametropia. That thorough mydriasis with its subsequent advantages will often result in permanent relief while nonmydriatic or transient mydriatic methods only serve to temporize.

Two cases are reported illustrating the points contended for above.

J. S. C., male, aged thirty-three; electrician. Preliminary examination, nonmydriatic, gave the following correction: O. D.—.50 D. C. axis 180° O. S.—.50 D. C. axis 180°. Mydriasis by homatropine gave the following correction: O. D. plus 1 D. C. axis 90° O. S. plus .75 D. C. axis 90°. Next day plus .75 D. C. axis 90° was accepted and prescribed for both eyes.

This case shows the necessity for the routine use of mydriatics in all cases. Minus cylinders proved perfectly satisfactory at the preliminary examination, improving vision and causing uniformity of spokes of clock dial. That the correction would have been palpably wrong is shown by subsequent results under mydriatic.

Mrs. P., of Chatham, Ontario. Preliminary examination O. D. plus .75 D. C. axis 90° O. S. plus .75 D. C. axis 90°. Hyperphoria 1° esophoria 1½°. At twenty inches, exophoria 2½°. Transient mydriatic gave approximately same result for correction, hyperphoria being reduced to ½° and esophoria reduced to 1°.

The futility of these tests was recognized and patient was directed to use atropine in eyes four times daily for several days. Correction at end of that time was as follows: O. D. plus .25 D. S. plus 1 D. C. axis 90° O. S. plus .25 D. S. plus 1.25 D. C. axis 90°. Imbalance of all muscles had disappeared and correction as measured after prolonged mydriasis was prescribed to be worn constantly.

Symptoms in this case were of the exaggerated asthenopic type. For several months patient had been wearing the correction as found by the transient mydriatic method and complained that though she could not do without the glasses, many times they seemed to intensify her suffering. The prolonged mydriasis had a sedative action on the irritability of the eyeballs, enabled patient to wear her full correction comportably and apparently restored the equilibrium of the eye muscles.

A NEW TREATMENT OF TUBERCULOSIS.*

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In a communication to the Detroit Academy of Medicine last year, I pointed out the similarity that exists between the lesions of certain forms of tuberculosis and the gummata of syphilis in certain stages, in their histological formation. I showed specimens of each under the microscope and it was impossible to distinguish one from the other. I do not mean to say that an exact similarity exists in every case, but that it is easy to show that these lesions have many points in common, when carefully hardened specimens are compared. They are both formed from the connective tissue of the part in which they are situated; they are new growths entirely distinct from the surrounding tissue; they are very unstable, readily breaking down, and they are both formed by the action of a toxin on the normal tissue. Having these points in common, I asked, why should we not find some substance that would act on the tubercular growth in the same manner that mercury acts on syphilis? It is with this idea that I have worked on this subject for many years.

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* Read at the Port Huron meeting of the Northeastern District Medical Society of Michigan.

In syphilis we have a gumma formed in almost any part of the body. This has certain definite structural formation, and continues to grow until inhibited by the exhibition of mercury, et cetera. When this gumma is brought under the influence of the drug its growth is at once arrested, presumably by the destruction of the toxin that caused it, and retrograde changes are initiated, which reduce it to the condition of a foreign body in the tissues; they immediately commence the formation of a capsule round it, to isolate it from the surrounding healthy tissue. This capsule follows the course of all fibrous connective tissue formed under abnormal influence, and contracts on its contents, which become transformed into an amorphous mass surrounded by a connective tissue capsule, having is own special blood supply. I have had several opportunities to follow out this process in detail in cases wherein the patient died many years after the syphilitic toxin had been eliminated from the system.

In tuberculosis we have lesions of very similar character but formed by the action of a different toxin. If we examine the lungs in cases of acute miliary tuberculosis, we can study the formation of the tubercles *ab initio,* and we find that they commence with a giant cell, or sometimes more than one, in the center, surrounded by a reticular tissue and cells. This minute tubercle increases in size by the formation of other minute tubercles in its periphery, while the centre necroses, probably for lack of nutrition. We cannot follow the arrest of the disease process as we can in syphilis, but we do know that it is arrested in some manner by the numerous cases wherein obsolete tubercles are found in the lungs after death from an entirely different disease.

There is another important point in the similarity of these two diseases: they are both constitutional. We all know that we cannot produce syphilitic lesions on the abdominal wall of a patient by the inoculation of the pus from a true Hunterian chancre of the same case; neither can we inoculate a case of *true tuberculosis* with pus from its own lungs.

There is another point which has caused me considerable surprise, and that is the continual statement in the most recent works on pathology that the tubercle is avascular. I have numerous lungs from cases of acute miliary tuberculosis studded with typical tubercles from apex to base, which have been injected with Berlin blue directly after death. It is exceedingly rare to find a section of any one of these lungs in which blood-vessels cannot be seen full of Berlin blue in the substance of the tubercle. It is a self-evident fact that if the Berlin blue has passed into these blood-vessels they were patent, and blood flowed through them during life. The same condition can be shown in the spleen. It would be an extraordinary fact that of all connective tissue growths tubercle should be the only one without blood-vessels, especially when we see the enormous numbers there are in ordinary granulation tissue.

I may mention here the manner in which I conceived the idea of the action of the metallic salts on living tissue. More than twenty years ago I made numerous experiments on different organs of the body, with a view to determine their nerve supply. In these experiments I used, among other things, a solution of gold chlorid. This I reduced in the physiologically living tissue with tartaric and other acids and heat. I found that I obtained a great variety of oxidation products in the tissues, and in some tissues an oxidation product which differentiated them from all others. I then tried the effect on minute living organisms. I obtained some very curious results,, especially on rapidly growing larva and on tadpoles. I found that by introducing minute amounts of certain substances I could inhibit the growth of a tadpole's tail, for instance. I am now applying this in experiments on cancer, having now the opportunity to carry on this work which for a number of years I was prevented from doing by various malign influences.

Gradually, in years of experimental work in various directions, I conceived the idea of introducing something into the circulation which would combine with the toxin causing the disease, and form a combination in itself inert. With this view, Doctor E. L. Shurly and I worked for several years and produced our treatment of tuberculosis with chlorid of gold and iodin. For various reasons this treatment was abandoned, the principal one being that the injection of iodin caused such intense pain patients simply could not stand it for any length of time. Still the results obtained showed me there was some virtue in the treatment, and after many experiments I obtained an iodid of calcium with which I found I could introduce iodin into the system in a painless manner. I also found that in the double salt of palladium chlorid and sodium I had a substance with a much higher oxidizing power. Take a solution of this, ten minims of which represent one-fifteenth of a grain of salt; I use this with an initial dose of three minims once a day, gradually increasing it to twenty-five, or even more in some cases. Every case must be studied on its merits, and no two can be treated exactly alike. The iodin I give in doses of one-third of a grain three times a day, increasing the dose gradually to one grain, according to the condition of the patient.

An important point in cases of tuberculosis is, whether they are mixed infections or not, as the treatment will not control pus germs. I have seen it stated somewhere recently that the majority of cases were mixed infections. I am inclined to think from the statistics of my practice that this condition is exaggerated. At any rate, when pus germs are found in abundance in the sputum, they must be gotten rid of for various reasons, and this can easily be done by the injection of streptolytic serum. I find that three or four injections of ten cubic centimeters at a dose every two or three days, effectually removes them.

I may say here that a fit case for this treatment is one wherein the disease has not progressed too far, and the vitality has not been too much reduced. Such a case with a cavity of moderate size, soon shows the benefit of the treatment in the reduction of the fever, and cessation of night sweats. This is followed by a reduction of the cough, increased appetite and gain in weight. I have a number of cases wherein the disease has been entirely checked, and some of tubercular laryngitis wherein the throat is now entirely free from the disease. Some of my cases have been put to very severe tests without breaking down the new tissue in the lungs, and I have every reason to think the cure will be a permanent one.

At some future time I shall be glad to lay my results before the Society, and trust that it will pardon the very crude way in which the subject has been now presented through lack of time to elaborate it.

HEADACHE AND GYNECOLOGY.*

By J. H. CARSTENS, M. D., Detroit, Michigan.
PROFESSOR OF GYNECOLOGY AND OBSTETRICS IN THE DETROIT COLLEGE OF MEDICINE.

Considering the correct diagnosis of a case the prerequisite for treatment, I often find this desideratum a difficult problem, as my mind is prejudiced beforehand by the history I obtain from the patient or the physician. I must constantly struggle against this tendency of accepting the diagnosis of another, and proceed to examine the patient as though I had never seen him or her before or known anything about the case. Another great mistake is that the sick person is promised too much as the result of an operation, often having been told that all symptoms of disease will disappear if recourse is had to the knife, while I, on investigation, find that a complication of affections exist and that only slight relief will be given by surgical procedure, and I insist on the patient understanding the case thoroughly. The removal of a diseased appendix will not cure Bright's disease; neither will the extirpation of an ovarian tumor restore the heart valves to normal condition. Vaginal hysterectomy for cancer will not always prevent its recurrence in some other locality; nor will the removal of a tuboovarian abscess check the further progress of phthisis. The repairing of a lacerated cervix and perineum will cure a few headaches, and nephropexy will sometimes relieve indigestion.

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*Read before the Ann Arbor Medical Club, April 13, 1904.

The strong plea made for reflex disturbances, it seems to me, has permeated the profession so thoroughly, that altogether too much importance is attributed to reflex nervous action, and if some palpable gross lesion is detected, *that* is supposed to account for the various symptoms. There are reflex disturbances of many kinds, but not as many as is supposed. Many of the reflex symptoms are really due to the condition of the blood and poor nutrition brought about by disease. The most careful search in every direction is necessary to arrive at a correct diagnosis. Even with the assistance of all our modern methods of precision there are still many cases so obscure and so evasive that in endeavoring to arrive at a diagnosis we find ourselves at sea without a compass. What I have constantly urged is more thoroughness in methods of diagnosis. Simply because some palpable, easily recognized condition is found, *that* should not be considered the only trouble.

We abdominal surgeons probably require freedom from an unprejudiced mind more than other specialists, especially if the patient is a woman, and every affliction is attributed to disturbed function or diseased condition of the pelvic organs. The patient's mind dwells on the subject because of repeated reiteration and suggestion that it must be something of that kind, and we are often expected to cure consumption, heart disease, rheumatism, locomotor ataxia, diabetes, and chronic constipation. All these I say, and many more of a similar nature, we are supposed to cure by some simple or complicated operation.

The young and inexperienced specialist who has just graduated is naturally deceived and operates, but the patient is not cured. I have always maintained that every specialist, no matter in what department of medicine, should be an all-around general practitioner, and above all else a good diagnostician. Mistakes enough will happen even then and we can always find something, no matter how slight, in the female pelvis.

To show how we must be on the lookout I will just report a few cases which beautifully show the point I am trying to illustrate:

Case I.—Miss M. R., aged twenty-eight; had a chronic left salpingo-oophoritis of some years standing. Sometimes the condition would be better and sometimes worse, especially during menstruation. She had headache and all the accompanying symptoms of pelvic disorder which I need not enumerate. As all palliative treatment had been of no avail she was sent to me and I operated September 28, 1903, removing the left tube and ovary. She made an ideal recovery, but still complained of headache and sleeplessness. She returned home eighteen days after the operation with directions to take some tonic of iron and strychnin for a month or two. Two weeks later I was called to the house as she was suffering from terrible headaches and could not sleep. I prescribed mild remedies, chloral, caffein, trional, et cetera, with little benefit, the headaches coming on generally in the afternoon about 5 o'clock, which might seem like malarial toxemia. I gave her a few large doses of quinin. She seemed a little better, but a few days later I was called again. The headaches were worse than ever. As her environments were not of the best I made her reenter the hospital where she could be under more thorough observation. A careful blood examination was made, also urine analysis, but absolutely nothing could be detected. All the functions of the body were perfectly normal, except the headaches. Her skin was as clean and clear as a child's. One day she told me, when inquiring about her past history in trying to get some cue, that she formerly suffered a good deal from sore throat. It suddenly dawned on me that this might be syphilis. On examination I found marked enlargement of the postcervical glands. All was perfectly clear. I ordered hypodermic injections of one-fourth grain of corrosive sublimate once a day, and three days after her headache was better and after twelve injections she was perfectly cured.

Case II.—Mrs. G. J., aged forty-nine; the mother of five children. She came here from Colorado to be operated upon for fibroid tumor. The menopause had about been established, but the tumor continued to grow. The tumor did not annoy her; it was the intense headache and the disturbances of the stomach. She was unable to sleep at night, only getting a little for an hour or two sometimes early in the morning; but still worse was the irritable condition of her stomach, in fact like the uncontrollable vomiting of pregnancy, and nothing could be retained. In two weeks, she claimed, she absolutely retained nothing. She had lost thirty pounds in flesh and was quite feeble. On examination I found a large fibroid tumor of the uterus. I examined her chest also, as she had a slight cough. I noticed a peculiar condition of the clavicle and found a number of well-marked nodes, some being on her chin bone. It was a clear case of tertiary syphilis and bore no relation to the fibroid tumor, which I was to remove to cure the headache. I gave her one-fourth grain of bichlorid of mercury, hypodermically, once a day, continuing the treatment for twenty-five days. At the end of this time the gums bore a slight indication of the use of mercury. In three days after beginning treatment she could retain food and her headache lessened. In a week she had a most ravenous appetite and slept soundly all night. No anodynes had been given. She seemed perfectly well and I was about to operate on her in a few days, she being about, apparently in perfect health, when one afternoon while she was sitting in a chair she said that she felt faint and was taken with a sort of convulsion akin to an epileptic fit, some frothing at the mouth and hard breathing. In fifteen minutes she was dead. Fortunately we could make a postmortem. Her brain was filled with blood, and contained an apparent tumor about the size of a hickory nut, which on examination proved to be simply an old blood clot, although the history her sister gave of her did not show any previous attack which could suggest an effusion of blood in the organ.

Case III.—Mrs. W. W., aged thirty-six; had a cystic tumor of the pelvis. She had headaches for fourteen years and for three months they had been so severe that she could not sleep at night. On examination I found that she had a cystic growth, but she was suffering from syphilis. I had her enter the hospital, for preparatory treatment, about the middle of January. I gave her bichlorid of mercury injections, one-fourth grain, every morning for twelve days. She began to complain of sore gums and I discontinued the medication. I gave her a little mouth wash which soon relieved her. On February 10 I operated on her and found that very rare condition of two intraligamentous cysts on the left side. She made a smooth recovery and is now in good health.

Many other cases could be reported, not only of syphilitic but other kinds of headache due to masked conditions, but I do not care to stretch the point too fine, otherwise it cannot be seen. In this little paper I simply wish to call attention to the fact that syphilis is often the cause of headache which is easily overlooked, if no other marked indications of the disease exist. When pelvic disturbances are found other conditions are usually attributed thereto. We must constantly be on our guard and approach every case with an unbiased mind.

To summarize, I want to make the following points:

(1) Headaches are often not due to diseases of the pelvic organs.

(2) Headaches are often caused by obscure tertiary syphilis.

(3) When patients are suffering from more or less headache, especially accompanied by sleeplessness, make careful examination for characteristic syphilitic lesions. If you fail to get a history of marked symptoms try a little mercury and potassium iodid anyway.

TRANSACTIONS.

ANN ARBOR MEDICAL CLUB.

STATED MEETING, APRIL 9, 1904.

THE PRESIDENT, CYRENUS GARRITT DARLING, M. D., IN THE CHAIR.
REPORTED BY JOHN WILLIAM KEATING, M. D., SECRETARY.

DISCUSSION OF PAPERS.

DOCTOR J. H. CARSTENS, of Detroit, read a paper entitled "Headache and Gynecology." (See page 155).

DOCTOR PETERSON: Doctor Carstens has brought out the fact that we are apt to overlook syphilis as an etiological factor in the production of headache. I must confess that I had expected to hear a somewhat different paper, and on my way to this meeting I ran over in my mind what my gynecological experience with headaches had been. I must confess that I was only able to definitely locate one distinct form of headache which seemed usually to be associated with pelvic lesions. This is the headache that is associated with a relaxed pelvic floor. I do not mean that, when a woman complains of pain in the back of the head, it is always due to a torn perineum. It is, however, often associated with this condition. The patient complains of an aching in the occipital region, associated with a distressing loss of memory. They are unable to concentrate their minds upon their work. Many of them fear that they will eventually lose their minds. Unless due to other abnormal bodily conditions, you can usually promise the patient that such a headache will cease after the pelvic floor has been repaired.

The next most frequent form of headache that the gynecologist has to deal with arises not from reflex causes, but from the general condition of the patient. I find it most common in women whose elimination of urine is deficient. Such patients pass in the twenty-four hours but sixteen to eighteen ounces of urine of a low specific gravity. The twenty-four hour amount of urea is much below the normal and the woman suffers from nonelimination and is, in fact, being poisoned. There may be neither albumin nor casts in the urine, the kidneys, however, are not up to the mark and are giving rise to the patient's symptoms. It should not be lost sight of that in such patients, the ache is not merely confined to the head. We may have a neuralgia in any part of the body, along the course of the sciatics or the intercostals. Placing such patients upon thorough diuretic treatment and preferably large amounts of water, the headache will disappear and the symptoms be relieved.

Menstrual headaches are quite frequent. There is a distinct menstrual headache that differs from all other forms. The women may be subject to headaches at other times of the month. However, they will tell you that their pains are entirely different from those which occur during or right after the menstrual period. These headaches are apt to be very regularly associated with the menstrual period, so that the woman comes to expect them just as much as she does her periods. Such a headache may occur in women with pelvic disease or in those who are free form it. Of course, where pelvic disease exists, it should receive the appropriate treatment.

Next we see the headache that occurs in young unmarried women who have trouble in the pelvis, possibly an undeveloped uterus, which in turn produces dysmenorrhea. Again, we may find the headaches in these young people without any apparent disease of the pelvic organs. In some cases, the mere removal of the pelvic trouble will not relieve the headache. Such people are doomed to be sufferers. Their nervous systems are in a state of unequal equilibrium. They should be treated by the neurologist rather than by the gynecologist. On the other hand, when a congenital anteflexion has produced an endometritis, the local condition should be treated along surgical lines with the hope that the headaches will disappear as the local condition is improved.

Headache is much less common in hospital than in private practice. This is because pain in the head is more prevalent among the well-to-do than with people who have to work more. I think it will be readily acknowledged that the gynecologist is often called upon to treat many and all kinds of headache. As Doctor Carstens has said, it is his duty to seek the cause and effect a cure if possible.

Doctor W. J. Herdman: I am heartily in sympathy with the statement that Doctor Carstens made at the outset, of the necessity for a very thorough investigation of the patient from all points of view before the purpose of preparing one for the special treatment. Headache is a symptom, and a symptom of such a great variety of disorders that we must not get narrow and look to the pelvis for the solution. As Doctor Peterson has said, there are some headaches which are practically incurable. Migraine, for instance, attacks people with a peculiar tendency for it. In many cases it is a deficient state of physiological action, and comes on at a certain period. And it is just as necessary that when the child reaches that period, it should have these headaches, as it should have any other physiological phenomena.

There is also the hereditary form of headache which is incurable, and this is a form which the gynecologist is very often asked to relieve. It is a form that has often affected the girl before she has had any disturbances from the menstrual function, and will stay with her until she passes through the stage of climacteric. It may be modified by her activity and by certain medicines, but she is doomed to that form of headache.

That there are reflex headaches there can be no question, and this reflex is not always direct. Oftentimes the individual who is suffering from the headache has only a certain amount of vital energy and if there is some great drain upon it, there is some function that must suffer the consequence. The suffering may be upon the part of the brain. Sometimes it may cause defective metabolism on the part of the liver; the blood becomes vitiated, and headache is a consequence. The correction of any pelvic trouble will not always correct the vitiated condition of the blood or the disturbed nutritive action that calls forth the headache.

The forms of headache that Doctor Carstens has called our attention to, are due to arteriosclerosis of the arteries in and about the brain. This form of headache is a most pronounced state of tertiary syphilis. Ordinarily the syphilitic headache can be determined by the time it comes on. Usually it is a headache that continues to come on late in the afternoon, continues until midnight, when the patient falls asleep, and comes on at the same time the next day. The headache is an intense burrowing, throbbing, pulsating headache; and the pain may even become agonizing. The syphilitic headache may arise in different parts of the head; but ordinarily it is the posterior cerebral and basilar vessels that are involved. It may, however, affect the Sylvian or frontal vessels.

Headache should always suggest to the practitioner the possibility of its being specific in character. Even if no history of syphilis is elicited a headache of that character should be suspected as having a syphilitic origin and iodides should be given; for, with headaches, the disease has not progressed so far, but that it can generally be successfully treated.

Eye-strain is a very common cause of headache and I should like to hear from Doctor Carrow on this point. It very commonly gives us a form of headache with which the gynecologist has to deal. In discussing headaches it has been attempted to ascertain the part of the head involved in the different kinds. Syphilitic headache may occur in any part of the head. As with eye-strain, it occurs most commonly in the occipital region, but next most commonly in the frontal region. I would accentuate the careful examination of the ocular reflexes, the ocular muscles and the condition of astigmatism to determine whether or not there is a strain upon the eyes which they may have had since infancy that is sufficient after they have reached a certain period in women and in men—when there is an additional demand upon their vital energy—to keep them from holding their own.

Headache is a protean thing. It arises from a thousand different sources, both direct and indirect: disturbed nutrition, vitiated blood states, intrinsic and extrinsic causes. A careful and thorough examination should be made in every case, disabusing your mind of any preconceived ideas, and searching the system from top to toe for the cause or causes.

DOCTOR CARROW: The discussion seems to be going very wide of the text. There are, to be sure, certain eye symptoms in connection with disturbances of the pelvis, and these, while they can often be relieved, are not cured until the pelvic disorders are cured. There are eye-strains which occur in the absence of any pelvic disease, and just in that direction our discussion seems to be wandering. Those headaches which come from some error in the refraction of the eyes make their appearance in the occipital region and in that respect do not differ materially from the headaches which accompany pelvic disease. Patients are often sent to the ophthalmologist for the relief of headache which comes as a direct result of disease in the pelvis and we cannot relieve these. We find frequently that there is no error of accommodation or refraction and we must send them back. The headaches of eye-strain are easily relieved by the adjustment of glasses, et cetera. I might go into this subject further, but the discussion is liable to be unduly lengthened.

DOCTOR C. GEORGE, JUNIOR: I have been interested in Doctor Carstens' paper from the standpoint of the general practitioner, especially with regard to the advice a surgeon has to give when called in consultation concerning a patient who suffers from pelvic disorders. Such a patient may be suffering from severe and frequent headaches and pains in various parts of the body and pelvis arising from some obscure gynecological condition from which there has been no benefit from prolonged palliative and medical treatment, but her friends have assured her from personal experience that she can expect permanent relief by an operation. I have such a case under treatment; a woman who has been a constant sufferer for over eight years, having been treated by several other practitioners during this period. About eight years ago she consulted a local physician for pains in the small of the back and ovarian regions. He performed an operation for repair of a lacerated perineum. As she gained no relief from her pains she was advised to enter the Homeopathic hospital, where an operation was done for removal of the ovaries. As a result of these operations the condition of the patient became worse instead of better. The pains have increased in severity and are quite constant. Hardly a day passes without severe, agonizing pains in the head, pelvis and extremities along the main nerves. Furthermore, she has constant pain in the small of the back. From observation of this and other cases of chronic invalidism following operations for the removal of the ovaries the conclusion seems forced on me that the operation is not often indicated, because the ovaries seem to secrete a substance which is essential to the female organism. As Doctor Carstens says, a surgeon cannot always promise permanent relief to a patient suffering from obscure pelvic disorders. If the ovaries are diseased they may be resected but this may not effect a cure if other conditions are present. Local treatment should always be supplemented by a study of the general constitutional condition and other disorders that are present should receive appropriate treatment.

Doctor Inglis: I had the pleasure of knowing Doctor Carstens, when he was in the process of making. Carstens sent a case to me at that time. He had sewed up a woman's perineum, and had removed her ovaries. Then he had turned the case over to an ophthalmologist to have the eyes operated on. Then he sent her to the neurologist. My clerk wrote her history and at the close put the words, "Still, Mary is not happy." I tried to build her up and finally Mary became happy. Then I joshed Carstens about it, and said that the neurologist had made Mary happy. But those preliminary things that the other doctors had done were necessary preliminaries. The difficulty is, with us all, that we do not take a general view of the case, and it is because we do not do so, that we fail and fail so miserably. One of the things it is difficult to get into our heads is the fact that disease may be caused by not a single cause but by two or more causes. I think that general practitioners are a great deal safer than specialists. They generally keep in mind a large number of things, but sometimes they, too, make this mistake. Doctor Carstens' paper is a valuable one because it makes us remember that we must keep in mind everything.

Doctor Vaughan: I have listened with much interest and profit to Doctor Carstens' paper. When I have to deal with severe cases of headache, I generally first send them to the ophthalmologist. He frequently is able to be of benefit; in some cases he can do nothing. There are many cases of masked syphilis, and we must remember that this disease is not always accompanied by headache. My practice for the past few years having been largely confined to the treatment of tuberculosis, I have been brought in contact with several cases of supposed tuberculosis which were in reality syphilis, and I am coming to believe that hidden cases of this disease are more frequent than I formerly believed. Undoubtedly many cases of headache are connected with disorders of the pelvis. However, this connection is not always clear, and the worst cases of headache I have to deal with in women are those which have no pelvic disturbance. The connection between headache and renal affections must not be overlooked. Delicate tests for albumin in the urine must be employed, and when Bright's disease is detected, I believe that the best results, both for the kidney lesion and the headache, will be found in a strict vegetarian diet. I have been thoroughly convinced that most people eat too much meat and that it is possible, and indeed easy, to live upon a strictly vegetarian diet. Under this diet many people who complain of headaches will be much relieved. The worst forms of headache in women are seen in those who have inherited an unbalanced nervous organization. These are the cases that sadly perplex the physician and lead him to try one thing after another, and I am sorry to say that after doing this, he is often quite as much at sea as he was in the beginning.

Doctor Carstens: Gentlemen, you have been very kind to me indeed. I simply wanted to call attention to the fact that headaches are caused by various conditions, and that gynecological conditions comprise only one division causing interference with digestion and faulty metabolism. Some headaches are due to insufficient elimination. Frequently they are absolutely independent of pelvic disease. I merely wanted to show you that we are not always on the lookout. I make mistakes, and always consider syphilis when making a diagnosis. Formerly, when I was professor of materia medica, I put great emphasis upon the use of potassium iodid, and one morning on entering the lecture room I found that the students had written upon the board

"When on the diagnosis you cannot decide
Just try a little potassium iodid."

The first case which I cited was a handsome young lady with a beautiful skin that failed to arouse suspicion of syphilis. In the second case I was on the lookout. I did not know what to write about for this occasion until these cases suggested the subject. I need not admonish you, but thought your secretary might publish the paper and thereby put a number of doctors on their guard.

CLINICAL SOCIETY OF THE HOSPITAL OF THE UNIVERSITY OF MICHIGAN.

STATED MEETING, MARCH 30, 1904.

The President, CHARLES LANPHIER PATTON, M. D., in the Chair.
Reported by JOHN H. GILPIN, M. D., Secretary.

DISCUSSION OF PAPERS.

Doctor Ralph Fox read a paper on "A Case of Cellulitis Following Infection of the Finger," after which the patient was exhibited.

Doctor Dock: I should like to call attention to the striking testimony which the case bears to the influence of fashion upon medicine.

For the last twenty years every medical school in the country and all medical teachers have been talking against poultices. Medical writers, too, always talk against poultices. As a matter of fact, there is a stage in a case of this kind, when a good hot poultice may be of assistance. The putting of such a mass as was used in this case over the body is one of the saddest things imaginable. Here we can see the folly of such a procedure. In pneumonia and similar diseases you do not see it. If the case recovers it is supposed that the external application did the work. Here anybody can see how harmful such treatment may be.

DOCTOR SAMUEL OSBORN read a paper on "Amebic Dysentery, Trichomonas Intestinalis, Anchylostomum Duodenale and Trichocephalus Dispar in the same Patient," the following being an abstract:

C. S., entered the University Hospital March 10, 1904, complaining of chronic diarrhea with blood and mucus in the stools. He entered the Philippine service in April, 1901, and returned to his home in Michigan in March, 1903. He was confined in hospitals in the Philippines several months with diarrhea and the condition has been practically continuous since his return. On his entrance to the hospital here he appeared in fairly good physical condition. Examination of the stools showed many amebæ, red blood cells, Charcot-Leyden crystals and many very active trichomonads. He was passing from twelve to eighteen stools daily. On later examination the stools were found to contain anchylostoma eggs in large numbers and a few of the eggs of trichocephalus dispar. Examination of the rectum about six inches up showed congested and swollen mucous membrane with slightly elevated hyperemic lines like the borders of healed ulcers. Differential leukocyte count showed an eosinophilia of twelve and two-tenths per cent. Saline injections of three quarts at 110°-115° were begun at once and they have been repeated each night. Each morning a saline laxative is given. A diet of albumin water, lime-water, poached eggs and toast has been given, gradually increasing the amount. He is now given some scraped beef. At present he is passing a smaller number of stools, four to eight per day, with less blood and mucus and fewer amebæ. Still on passage of rectal tube and examination of contents of end of tube amebæ and trichomonads are found. A count of anchylostoma eggs showed that he passed one hundred eighteen thousand eggs in a single stool of two hundred fifty-three grams weight. The patient lost a few pounds in weight on his entrance to the hospital when he was given his lightest diet. Now he is gaining in weight. The case will be reported more fully later.

DOCTOR EDMUNDS: This case was of most interest to me for the lesson it gave on the importance of examining the stools. I have always been willing to examine the blood, urine, et cetera, but this case has emphasized for me the importance of examining the stools. The disease produced by the anchylostoma was described three thousand four hundred fifty years ago, so it is not a particularly new disease. At that time the worms were taken to be the result of the disease rather than the cause. In 1843 the worm was first accurately described by Dubini, of Milan. In 1893 it was discovered in this country by Doctor Blickhahn, of Saint Louis. From 1893 to 1902, there were thirty-five cases of the disease described in this country. One difficulty has been that there is an organism closely related to it, the anchylostoma americana. This was discovered in Florida, Alabama, and Georgia. It is connected very closely with, and been proved by Harris and other observers to be the cause of a large number of anemias. This is a distinct variety from the one we have here, which is the "old world" variety in contradistinction from the "new world" worm. In Italy, and the southern part of Asia, and especially in India, it is very common. A great many of the coolies are afflicted with it in India, and a number of epidemics have occurred. It is the cause of Egyptian chlorosis, of miners' disease, et cetera. The principal symptoms are weakness, anemia, and cachexia. The germ leaves the body with the feces, and when care is not taken, it gets into the earth and is transmitted to the food, so the disease occurs principally among men who are not careful about their personal habits. It is often found among brickmakers, tunnel men, and miners. It is very easily taken in with the food and it only requires five or six weeks from time of infection before the ova may be found in the stools. The principal symptoms are those resulting from the anemia. The disease is usually chronic. In a severe case one may, however, have acute symptoms such as vomiting, with occasionally eggs in the vomitus. There may also be some pain in the epigastrium, but usually not, unless the infection is very severe. The symptoms come on with weakness and palpitation of the heart. As a usual thing, not many worms are found. They are rarely located in the stomach, but frequently in the duodenum, and they are most abundant in the jejunum. They attach themselves to the mucous membrane in which they bore a small opening to withdraw blood. They are often found full of red-blood cells, but the serum is the only part they use as food. Their main action is this withdrawing of blood, although there may be some toxic substance formed. The yellow pigmentation of some of the organs is thought by some to be due to toxins. The prognosis is pretty good, depending upon the anemia and cachexia which have developed. If taken early there is very good chance of curing the patient. The worms can only live for five or six years, so that spontaneous recovery may take place if no new infection occurs. In the treatment two drugs are employed, male fern and thymol. Both drugs occasionally result in poisoning. Thymol is recommended more largely, but has to be given in large doses, and even then a number of cases are not helped by it. In India at the Assam dispensary, they treated ninety-two cases and seventeen died; several of these dying within six days after giving the thymol. It will be rather interesting to note the number of worms present in this case. In a great many cases one finds very few and of course the degree of cachexia depends largely upon the number present. It is said that one must have at least five hundred worms present for six months or a year before cachexia results. Patients may live for a long time and have no symptoms from the anchylostoma, and this patient has probably had no symptoms whatever from this worm. In the cases treated at the Assam dispensary, the average number of worms expelled by the patients who died was five, and in no case were there more than ten. Probably seventy-five per cent of all cases do not have over fifty worms. In the Saint Gothard tunnel epidemic, two thousand to three thousand worms were found in some of the cases. To me there is the question of the propriety of diagnosing such a case as this as "anchylostomiasis." Probably a large part of the people of India have these worms in their intestines, but would one diagnose them all as cases of anchylostomiasis? Typhoid germs might be found in the feces of this patient, but if symptoms were not present no one would diagnose "typhoid fever." Similarly would one diagnose it anchylostomiasis?

Doctor Dock: I congratulate Doctor Osborn on his paper, and Doctor Edmunds on the very full and clear comments he made. The mildness of the symptoms in the present case agree with what has been observed in certain parts of the world, namely, that all degrees of severity can be noticed, from latency to the most marked picture. In this case the condition is very different from that in which severe anemia is present, and also in those that have given rise to the idea that anchylostoma or uncinaria americana cause laziness. This patient has led a most strenuous life, even with the double handicap of anchylostomiasis and amebic dysentery. It would be interesting for Doctor Edmunds to count the eggs in the man's stools, in order to get an idea of the number of worms present. It has been claimed that for every egg per centigram of feces, there are two worms. Though the patient has no distinct anemia, it is interesting to note his eosinophilia, not high, but in the absence of other explanations enough to excite attention to the stools, though the amebic infection might have been able to account for it. The presence of the tricocephalus dispar (or trichuris) eggs is interesting, because Askanazy has shown that this parasite also sucks blood. From the scanty number of eggs found, these parasites are prabably less numerous than the anchylostoma. Dhobie itch is another ailment suffered by this patient, pigmentation of which is quite marked on his body.

Doctor Elmer read a paper entitled "Some Observations on Albumoses in the Urine," making a brief historical sketch and considering the probable causes of albumose in the urine, the most likely of which being a necrosis of tissue in some part of the body in intimate connection with the circulation. The clinical significance was then briefly touched. The tests then received attention. The reagents were described, the most highly recommended being salicyl-sulphonic acid, one ounce to one ounce of water. The degree of delicacy was discussed and finally the varieties of albumose with their significance.

Doctor Dock: This is a very promising line of work. Much has been known about peptones, but the reaction that Doctor Elmer has been working with seems to be more useful than others. Such a test is valuable in every line of practice; perhaps more so in other lines than in internal medicine. In various malignant bone diseases we get an albumose reaction, the exact nature of which has not been worked out, and yet the discovery turns our attention to the bones. Especially in surgical cases is the test promising. I might refer to a case mentioned by Doctor Gross. He was interested in a patient operated upon for tumor of the abdomen. Doctor Gross discovered in the urine a considerable amount of albumose. He made the diagnosis of abscess, and when they opened the woman they found a large abscess cavity filled with pus. The mere fact that a number of good men had not come to that conclusion shows how useful such a test may be.

Doctor Cowie: I also wish to congratulate Doctor Elmer on his good report. Testing for albumose in the urine, as has been pointed out by Doctor Dock, has a very important bearing on diagnosis in general. The test referred to in Doctor Elmer's paper may be employed not only in the urine for the recognition of septic conditions in connection with the circulating blood, but also in stomach fluids for the purpose of knowing, in those cases where peptones are absent, whether proteid hydrolysis has gone on to the formation of albumose.

Doctor Elmer: I intend to work on the relation between albumose and high leukocyte count. In high leukocyte count the urine contains albumose. The high leukocyte count and the albumose will have about the same relation. In the case of one patient I found albumose repeatedly when the leukocytes only numbered nine thousand to ten thousand. In that case it seemed that the albumose was more delicate than the leukocytosis.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, FEBRUARY, 1, 1904.

THE PRESIDENT, JAMES HAWLEY BURTENSHAW, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

REPORTS OF CASES.

GASTROPTOSIS.

Doctor William Van V. Hayes: This woman, thirty-eight years of age, first came under my observation three years ago, suffering from gastroptosis. She gave a history of severe gastric pain, which ran through to the back, coming on after eating and lasting for two or three hours. She vomited frequently, and was unable to obtain relief until the stomach was empty. Eructations of gas, anorexia and constipation were marked symptoms. The stomach, on examination, proved to be sensitive to the touch, and was displaced downward about the width of three fingers, as shown by the position of the lesser curvature. The functional signs revealed an adenasthenia gastrica, there being no free hydrochloric acid and a total acidity of only twenty. Tincture of nux vomica and fluid extract of condurango were administered. (Incidentally, in the course of treatment, she was relieved of a tapeworm). The Vanvalzah-Nisbet bandage was applied to the abdomen. This bandage reverses the action of the ordinary corset and pushes the stomach upward and backward. Occasionally the use of a supporting bandage produces a decided change in the position of the stomach, but ordinarily this can hardly be expected. There is a distinct improvement in the condition of the patient. She has gained several pounds in weight, which doubtless helped to keep the stomach in better position. Her general condition is much improved, and there has been practically no symptoms for three months. The supporting belt is no longer required. She was given solutions of bicarbonate of soda and tartaric acid, about a minute apart, to demonstrate the improvement in the position of the organ, which was found to be two fingers' breadth higher than when originally observed.

ATROPHIC GASTRITIS.

DOCTOR HAYES: This man, fifty years of age, was first seen by me in 1897. The patient then gave a history of having suffered for about a year from vertigo, nausea, regurgitation of food and expulsion of gas three hours after eating; his appetite was poor, and there was a tendency to diarrhea and extreme nervousness. He had been moderately adicted to the use of alcoholic drinks, and had taken large amounts of strong medicines. He was treated for syphilis in 1890-1891. Analyses of the stomach contents during the past six years gave practically the same results. The total acidity ranged from six to ten. No free hydrochloric acid was found. Ferments were absent, but mucus was always present. The condition is one of atrophy of the mucous membrane. There has been very little change in the condition of the patient and there will probably be very little, so long as the motor function of the stomach is retained and the intestinal compensation maintained, but if these should fail, very little could be done to help him. During the six years the stomach has practically done nothing except to pass the food onward. This patient demonstrates how a person with atrophic gastritis may live for a long time in comparatively good health.

DISCUSSION.

DOCTOR MORRIS MANGES: Regarding the second patient presented by Doctor Hayes, I would call attention to the statement made in the presence of the patient that large quantities of the iodides, which the man had taken, were probably responsible for the atrophic gastritis. In my opinion atrophic gastritis is one of the most complex and least understood of all diseases of the stomach. There is no positive evidence as to whether it comes from the mucosa or the submucosa farther down. It is known that cases of pernicious anemia exist and are associated with atrophic gastritis. The exact pathological classification is unknown. As regards the influence of strong medicines in the causation of gastritis, it may occur as well in the late stages of alcoholism, but that is an entirely different picture. Atrophic gastritis is largely due to changes in the portal circulation, secondary to changes in the liver itself, and there is a clear distinction in the etiological elements of the cases, and subsequent changes have nothing whatever to do with the disease. Many syphilitics have had larger doses of iodides than the patient under discussion, and no atrophy resulted, but the patients derived the greatest benefit from this medication. I prescribe, for all cases of atrophic gastritis, five to seven minims of hydrochloric acid at each meal, for the remainder of their lives, and think that this treatment and the motility of the stomach are the chief factors in the disease.

DEMONSTRATION OF SPECIMENS.

DERMOID CYST.

Doctor James P. Tuttle: I wish to show a very unusual specimen of a dermoid cyst. There was practically no history until the day previous to the operation, when the patient, a girl about eighteen years of age, went to the office of her family physician and complained of difficulty in making her bowels move, and excessive pain when they did move. She was given an enema and a laxative. The next morning she had a chill. Examination then revealed a tumor in the left inguinal region about the size of a small orange. Her temperature was about 100° Fahrenheit. Three hours later the tumor had apparently increased about two-thirds in size, and the girl's temperature was 102° Fahrenheit. I was called in consultation and found her with a temperature of 102° Fahrenheit, inability to move her bowels, and a fluctuating mass in the left iliac region and in the rectosigmoidal juncture. My diagnosis was hematoma. The following day her pulse was faster and there seemed to be hemorrhage, so the vagina was opened through the posterior culdesac, and about six ounces of clear, serous fluid was evacuated. Passing my hand farther up, a large tumor was found, and, supposing it to be an abscess, I poked my finger through a rent in the apparent capsule, when fluid gushed forth, which, on bacteriological examination, proved to be filled with fat. Inside the capsule was a tumor, which was removed through the vaginal opening. On one side of the tumor were four protuberances, just in line. This mass, which was on the left side, was attached by a pedicle to the posterior surface of the right lobe of the liver. The tumor had apparently been lying in the posterior culdesac, and the hemorrhage pushed the tumor up to the position in which it was found at the time of operation.

DISCUSSION.

Doctor J. Riddle Goffe: Doctor Tuttle's specimen is a remarkable one. These masses are commonly found in connection with the ovaries, and the more I think of the development of a dermoid teratoma, the more inclined I am to believe that it is necessary for some form of degenerate conception to have occurred previous to their development. However, in the specimen under discussion, this is probably not true, as the patient is a young girl, and Doctor Tuttle says that both ovaries were present and absolutely undisturbed. It seems that one might trace a faint outline of a fetal mass, the larger projection at the top of the mass representing the head, two projections lower down for the shoulders and arms, and two at the other end for the lower extremities.

VESICAL CALCULI.

Doctor Edward L. Keyes, Junior: I desire to present a number of specimens of vesical calculi, and would direct attention to their formation, the difference in their composition and appearance, and the procedures by which they have been taken from various patients. The first interesting feature about stone in the bladder is the different varieties that occur and the manner in which they may be distinguished from each other. If the bladder is opened and the specimen taken out whole, the stone presents one picture, and if it is crushed and sucked out through the urethra, the picture differs. Some of the specimens represent stones of the two forms. The first distinguishing characteristic of these calculi is that they are either primary or secondary. The primary stone forms itself for no reason that can be recognized; the secondary stone is formed by the inflammation produced by the primary stone. While there are a great many different varieties under either head, the chief groups are the oxalate of lime stone, the uric acid stone, and the urate of soda stone. There are many kinds of secondary stones, but they are all modifications of one mixed mass of the various phosphates, and are known as mixed phosphates stones. Among one hundred and fifty stones, none of which have been examined chemically, as far as I know, all are included in one of these four classes. Specimens are shown representing four different varieties of stone under two different guises. Some are composed of oxalate of lime, and are very irregular in shape. For this reason they are sometimes known as mulberry stones. The color is not very clearly brought out, but they vary in shade. The urate stone is distinctly lighter in color than the mulberry stone, and the surface of the former is much more regular, but not entirely smooth. The phosphatic stone is smoother and somewhat resembles white agate in appearance. In the crushed specimens the color is much the same as in the whole stones, but is more distinct. The primary stones are all distinctly darker than the secondary phosphatic stones. Very frequently uric acid and urate stones are mixed in one deposit. Both have a distinctly reddish hue, as compared with the brown of the oxalate. A point worth noting is that the secondary stone sometimes forms as the result of inflammation caused by the primary stone; consequently in many secondary stones the beginning is primary, and the primary stone rolls about in the bladder, cystitis results, and changes occur in the alkaline urine, which throws out phosphates which are deposited on the primary stone. This stone probably existed for many years as a primary stone before it developed a phosphatic covering. The proper bacteria were not present to render the urine alkaline; a cystitis must have been present for many years before it became alkaline. This is an oxalate stone through which peaks of exalate show through the deposit of phosphatic covering. One great English authority, Doctor Morris, places the percentage of uric acid kidney stones as high as ninety-five per cent; in other words, of the many phosphatic stones removed from patients, the greater number are formed under nuclei of uric acid stones. This stone, the largest in the collection, was taken from a man thirty-six years of age. The stone had existed for thirty-five years when the patient went to Bellevue Hospital in 1860. A diagnosis of cancer of the bladder was made, and he died without an exploratory operation, exploratory laparotomies not being as common then as now. At the autopsy a stone thirteen ounces in weight was discovered, which was unquestionably the cause of death. The interior of the stone is oxalate, covered by layers of phosphatic deposit. In the oxalate stone the outside and inside are "bumpy," so to speak, and there is no regular formation, while in a uric acid stone in the collection there are systematic thin layers, one upon the other. The shape of a calculus is sometimes interesting, but not important, perhaps. The stone generally takes the shape of the cavity in which it lies, in a general way. All the stones are concentrically formed. There is a nucleus of what may be termed a "foreign body," either an actual foreign body or formed from the salts of uric acid. Layers of the same substance or of a new substance keep forming, and in a general way there is a roundish shape, with the exception of the oxalate stone, in which, in certain cases, the nucleus is not central. Several of the stones formed upon nuclei of actual foreign bodies. One or two formed upon the ends of catheters which were broken off in the bladder, and this especially interesting specimen formed on the end of a hair. The patient developed a tumor with a hairy surface, and the inflammation thus set up caused a cystitis with alkaline secretion, and phosphates were thus deposited on the hair. Thirty-one of the small stones were formed in the same manner, at the end of a hair.

Doctor Charles H. Chetwood: I wish to present two specimens of vesical calculi which are of special interest in connection with the general consideration of the subject by Doctor Keyes. The first specimen was removed from a three-year-old child about a week ago in the clinic. The size and compactness of the specimen would indicate that it is probably a fetal formation. The diagnosis was made with a silver probe, with which I touched the stone without difficulty. A suprapubic incision was made and the stone removed. It weighs 5.44 grammes. The patient has a suprapubic fistula, which I think will heal in a few weeks. The other stone formed upon a broken-off catheter, and was removed from a patient seventy-two years old who had an enlarged prostate. It weighs 10.44 grammes and is composed of triple phosphates and ammonium urate. The catheter nucleus was broken off in the bladder some three years before the calculus was removed.

CYSTIN CALCULUS.

DOCTOR MORRIS MANGES: I desire to show a cystin calculus which I think particularly interesting because there are probably not more than fifteen specimens in the entire world. The stone, which weighs fifty grains, was passed spontaneously by a boy twenty years of age. The patient disappeared, so that no chemical analysis could be made. These stones are closely associated with a putrefaction which goes on in the intestines and are excreted in the urine as well. This disease often occurs in families, but the chemical analysis is unknown. I also wish to show two specimens of renal calculus, and the kidneys from which they were taken. A patient who was operated on for the relief of difficulty in secretion of urine died, and upon examination it was found that extreme atrophy of the kidney had resulted from the impaction of a stone in that organ. The second specimen is a very good demonstration of the stone *in situ.* A very large kidney was packed with stone, which in time caused a hydronephritis. At the lower end of the specimen, part of the kidney could be seen beyond the pelvis, showing what extensive changes may be produced by the long residence of stone in the kidney.

X-RAY DEMONSTRATION OF STONE IN THE URETHRA.

DOCTOR ALBERT KOHN: I wish to present an *x*-ray photograph of a patient who has suffered from attacks of colic for fifteen years. His symptoms were relieved by hypodermic injections of morphin. After one of these attacks he had a chill, and the diagnosis of "surgical kidney" was made and a surgeon called. The patient was removed to a hospital, where he could be watched for confirmation of the diagnosis, and three days afterward he developed a second attack and one week later a third attack. An exploratory incision was made into the kidney, and no stone was found, but there was an acute infection. This wound was barely healed when the patient had another attack of colic, followed by a chill. The surgeon went in from below and catheterized the ureter and found what he thought was a stricture. The patient was sent to have an *x*-ray photograph taken and fortunately the stone lay directly in line with the photograph. The surgeon cut down on the ureter and removed the stone.

RENAL CALCULUS.

DOCTOR J. RIDDLE GOFFE: I removed this specimen of renal calculus from a woman, aged forty years, who was sent to me for operation for ovarian cyst. She had suffered from severe pain, from chills and fever, for about six months, and was treated for malaria. Her urine had been examined several times and no pus had been found. Examination revealed a large tumor, which had no connection with the pain, and upon opening the kidney a large stone was discovered, which blocked the passage. It was removed without difficulty and without opening the ureter. The specimens of calculus growing upon the end of a hair, showed by Doctor Keyes, recall to my mind a patient, female, aged forty-five years, who, several times a year, plucked tufts of gray hair from her anus. It always reappeared in a few months. She had a tumor, and on operating a large dermoid syst was found, and over the pelvis it had lacerated through the rectum and the rectum had closed around it. This was the origin of the tufts of hair.

DISCUSSION.

Doctor Ferdinand M. Jeffries: It is impossible to give a definite explanation of the etiological factors in the formation of these calculi. A number of theories have been advanced. One thing is certain—three factors must be present before calculi can be formed: (1) The chemical constituents of the urine; (2) nidus; (3) a substance capable of entering into and making stroma. It is true that two substances at least manifest in themselves a cohesive power, as seen in the uric acid of roseate crystals and in calcium oxalate where the crystals are found in rare spherical and dumb-bell shapes. The reaction of the urine will control the kind and variety of stone that is formed, an acid urine allowing only those to form that are insoluable in the acid, and an alkaline urine causing those that are insoluable in alkaline. As regards the nidus, Doctor Keyes has shown a number of specimens in which it was crystal; what forms on that afterward depends on what takes place in the bladder. One substance which Doctor Keyes did not mention, which is sometimes found forming the nidus, is a blood-clot. A peculiar feature regarding the formation of calculi is that they are especially liable to occur in particular, definite, fixed localities, while territories in the close vicinity may leave their population comparatively free from this affliction. This led to a strong opinion that the variety of waters might have something to do with their formation, but investigations on this line have not thoroughly satisfied those who adhere to this theory.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., Ann Arbor, Michigan.
Professor of Medicine in the University of Michigan.
AND
DAVID MURRAY COWIE, M. D., Ann Arbor, Michigan.
First Assistant in Medicine in the University of Michigan.

A BRIEF RESUME OF RECENT OBSERVATIONS ON THE OCCURRENCE OF PNEUMOCOCCI IN THE BLOOD OF PNEUMONIA PATIENTS.

The study of the bacteriological examination of the blood in the acute infectious diseases, particularly in typhoid fever, pneumonia, and scarlet fever, has become one of very great importance. During the past year much has been done to show that such examinations may be of diagnostic utility and in some cases of prognostic value.

With reference to pneumonia. It must be said that at least until quite recently the opinion of the many who have found pneumococci in the blood of pneumonia patients is by no means a unit as to their significance. There are those who regard the presence of these organisms in the blood a grave prognostic sign, while there are others who believe; and the bulk of evidence seems to be with them, that pneumococcos invasion of the blood is the rule and that it is of little if of any prognostic importance.

Among those who incline to the former opinion are the earlier workers, Sittman (1894), Kunan (1897), Kohn (1897), and more recently (1902) Cole of Johns Hopkins Hospital. Before Cole's work appeared Prochaska (1901) and A. Fraenkel in the same year and some others made claims that pneumococci are present in all cases of pneumonia. Much of this work was discredited by Cole on the grounds that improper technique and media were employed, and he is strong in the belief that the presence of pneumococci in the blood is of bad omen. It must not be lost sight of, however, that Cole's cases were all of a severe nature. Of sixty-three cases there was a mortality of forty-three per cent.

The work of the past year, particularly that of Rosenow ("Transactions of the Chicago Pathological Society, 1903, p. 265"), who found pneumococci in seventy-seven of eighty cases, and Kinsey (*Journal of the American Medical Association,* March 19, 1904), who demonstrated pneumococci in nineteen out of twenty-five cases examined. is so convincing as to rather point to the claims of Proshaska and A. Fraenkel as correct.

Technique.—It is the opinion of all who have met with success that comparatively large amounts of blood and bouillon should be employed. Kinsey's results are particularly instructive. He reports two series of cases of twenty-five each. In the first series from eight to nine cubic centimeters of blood were added to fifty cubic centimeters of bouillon, making a dilution of one to six. The results were three positive and twenty-two negative. In the second series one part of blood (three to six cubic centimeters) to fifteen or twenty parts of bouillon were employed with the result that nineteen cases were positive and six negative, most of the six negative cases being unfavorable cases. Cole employed both bouillon and litmus milk. Kinsey and others prefer the bouillon medium.

When are the Pneumococci to be found in the blood?—There seems to be no special time during the disease more favorable for the demonstration of the organism than another. Rosenow endeavored to determine the relation between crisis and pneumococcaemia. His results appear to show a higher per cent of failures thirty-six hours before crisis than earlier in the disease. He found pneumococci in one case as early as twelve hours after the initial chill, and in a few cases as late as some hours after crisis. Kinsey's results also show that the pneumococcus may be recovered from the blood at any stage of the disease.

Failure to find the organism is attributed to faulty technique not only by Kinsey and Rosenow but also by Prochaska, A. Fraenkel, Silvistrini and Sertoli.

Agglutination of Pneumococci by Pneumonia Serum.—A certain amount of importance has been attached to the serum reaction of the pneumococcus. The reaction occurs with serum diluted as high as one to forty and one to fifty. Rosenow was unable to obtain a reaction with higher dilutions. He obtained a reaction as early as the second day of the disease and found that the agglutinative power of pneumonia serum increased until the crisis, after which it diminished.

The Staining of Pneumococci on blood films.—If a method could be devised whereby pneumococci could be readily demonstrated in blood smears its value could not be overestimated. There are, however, some difficultities in the way. The amount of blood that can be conveniently handled on a cover slip is not great. Notwithstanding this Rosenow found pneumococci in blood smears of thirty-five cases of pneumonia and considers the method a practical one. It has been suggested by Prebel that larger amounts of blood might be used by making very thick spreads and after fixation freed of the hemoglobin.

All of the methods described above are so simple in their application that in hospital practice at least they may be used to advantage. They are welcome aids to the many clinical methods we have at our disposal for the diagnosis and differential diagnosis of croupous pneumonia and each has a special significance. Past experience has taught us that as time goes on the importance of many of these investigations increase, hence they are of great scientific value. D. M. C.

SURGERY.

By HENRY O. WALKER, M. D., Detroit, Michigan.
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AND
CYRENUS GARRITT DARLING, M. D., Ann Arbor, Michigan.
LECTURER ON SURGERY AND DEMONSTRATOR OF SURGERY IN THE UNIVERSITY OF MICHIGAN.

CONTRIBUTIONS TO SURGERY.

A number of good articles on surgery have been published during the past month.

* * *

Radical Operations for the Cure of Cancer of the Pyloric End of the Stomach.—William J. Mayo, M. D., of Rochester, has a paper in the March number of *Annals of Surgery* on this subject. He first calls attention to the frequency of the disease and the difficulty of making a diagnosis. For the latter we have the laboratory method, of great importance in the early manifestation of the disease though of little value in the surgical stage.

The Tumor.—The fact that a tumor can be felt does not shut out the operation as was formerly taught; a small movable tumor may be a favorable sign.

The History of Previous Ulcer.—Sixty per cent of the cases of cancer coming to operation had a history of ulcer.

Lymphatic Infection.—Enlarged nodes do not mean cancer infection. Attention is called to the work of Cuneo on lymph drainage of the stomach, showing that the fundus and two-thirds of the greater curvature may be free from lymphatic involvement.

The method of operation employed is divided into incision and exposure: control of hemorrhage, closing the stump, establishing the canal, avoidance of infection and measures for preventing shock. While much of this is well known to all who are acquainted with surgery of the stomach, there are some things new. The description is clearly and concisely given. He prefers the median incision, and controls most of the hemorrhage by ligating the gastric and superior hepatic arteries above and the right and left gastro-epiploics below. The omental structures are tied and the duodenum is cut with a cautery to prevent the exposed surfaces from becoming inoculated with cancer. The cut end is inverted and closed. The section of the stomach is made in the same manner and closed. The canal is restored by bringing up the small intestine as near to the cut end as possible without causing tension and making a gastro-intestinal anastomosis. While laying no claim to originality he has found that this method gives great satisfaction.

* * *

HIP AND THIGH AMPUTATION FOR SARCOMA OF THE FEMUR.—Doctor George F. Shrady reports (*Medical Record,* April 2, 1904) a high thigh amputation for sarcoma of the femur twenty-two years ago: the patient still alive and well. The tumor was situated over the inner condyle of the left femur, found to be a subperiosteal spindle-cell carcoma. The profession is almost unanimous in favor of hip-joint amputation in sarcoma of the femur. Dennis has reported a large number of cases of hip-joint amputations for sarcoma with no recoveries. Wyeth reports one hundred and thirty-one with five recoveries that exceeded the three-year limit.

The theory of dissemination being tenable the operation that removes the affected part will be sufficient so long as the disease remains local; when metastasis has taken place no operation will avail. The removal of the whole bone should always be successful if dissemination takes place only through bone marrow; even central disease will quickly approach the surface and spread through tissues so that any operation will fail. The article speaks for conservative surgery in sarcoma of the femur but the plan will not be generally followed by the profession.

* * *

SURGERY OF THE PANCREAS.—Doctor John R. Wathen (*Louisville Monthly Journal of Medicine and Surgery,* April, 1904). The possibilities of surgical treatment have led to a more careful study of the diseases of the pancreas; a brief review of the surgical anatomy of the organ is given, explaining how disease of the pancreas is associated with alteration in the bile passages, inflammation extending from one organ to the other. A gall-stone lodged in the common duct may occlude the pancreatic duct causing conditions favorable for infection of the organ. Hemorrhagic pancreatitis can be produced experimentally in animals by injecting acids, bile or other irritants. The most useful diagnostic symptoms are those referred directly to the pancreas; epigastric pain, tenderness, tension and tumor; vomiting and jaundice may be present. Examination of the urine may give sugar and the stools may contain fat.

The principal difficulties attending a surgical operation are to control hemorrhage and prevent escape of pancreatic secretion. Blood and secretion constantly oozing interferes with the formation of peritoneal adhesions so important for protection. To prevent complications the wound should always be drained.

Surgical conditions of importance are injuries, inflammations and new growths. Wounds of the pancreas may be overlooked and prove fatal. Inflammations should be opened and drained. Cysts may be opened and attached to the abdominal wall. The removal of tumors has not met with great success, cancer being the most common form.

GYNECOLOGY.

BY REUBEN PETERSON, A. B., M. D., ANN ARBOR, MICHIGAN.
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AND
CHARLES LANPHIER PATTON, M. D., ANN ARBOR, MICHIGAN.
DEMONSTRATOR OF GYNECOLOGY AND OBSTETRICS IN THE UNIVERSITY OF MICHIGAN.

PAINS ORIGINATING IN THE APPENDIX (APPENDICALGIA).

GUINARD (*Revue Clinique D'Andrologie et de Gynécologie*), in an interesting and instructive article, gives the result of three years' hospital experience with women, who, while not presenting the classical signs of appendicitis, are victims of pain in the abdomen, which his experience has convinced him arises from lesions of the appendix. The term appendicalgia has been coined to designate these cases because the symptoms of pain is often the only prominent diagnostic feature present.

These appendiceal lesions are not identical in all cases. Sometimes they are so insignificant that one is surprised to see the pain disappear upon removal of the appendix. Sometimes the appendix is bent at right angles and its circulation interfered with. In such cases, the cavity of the appendix will be found filled with clear fluid and the mucosa above will differ from that below the constriction. The mucosa often shows small hemorrhages. In addition, other evidences of chronic appendicitis exist, such as adhesions to the appendages of the right side and to the intestines. But whatever may be the lesion, pain practically is the only prominent symptom. This is not always located at McBurney's point, but may be in different parts of the abdomen in different cases. When once the sensitive point is located in a particular abdomen, it never varies. It often happens that the patient with appendicalgia has an abdominal tumor or has some other abdominal complaint. Naturally the pain is supposed to arise from this lesion and one is surprised that the patient continues to suffer after removal of the growth.

As an illustration of such errors of diagnosis, a case is cited of a woman of fifty-one who had suffered for some years with abdominal pains. These were supposed to be hepatic in origin, until five years later an examination by a surgeon revealed a uterine fibroid. Attributing the pains to this source, hysterectomy was performed, but the pains did not cease. It was then thought that her suffering must be caused by a femoral hernia which she had had for three years and she was referred to Guinard for operation. He made a diagnosis of chronic appendicitis, confirmed by subsequent operation. There was a complete cessation of the pains following the removal of the appendix.

A number of similar cases are reported. The conclusion is reached that a hernia which is easily reducible is not as a rule painful. If the hernia is on the right side and held in position by a truss and pains still exist, one should always think of the possibility of the coexistence of chronic appendicitis.

Uterine Fibroids and Appendicalgia.—Uterine fibroids, as a rule, are not painful. Patients who have fibroids consult the surgeon for hemorrhage, pressure symptoms and increased size of the growth. Whenever pain is present, we may suspect the coexistence of appendicitis, if there be no salpingitis as a complication. Out of forty-two patients operated upon for fibroids, eighteen had abdominal pain. Of these, one had, besides the fibroid, an ovarian cyst with a twisted pedicle, one had a ventral hernia from a previous operation and four had salpingitis. In eleven out of the twelve remaining cases, the pain was distinctly caused by appendicitis. In conclusion, the author remarks that he has never been obliged to remove the appendix during a hysterectomy for fibroid unaccompanied by pain.

Ovarian Cysts and Appendicalgia.—What has been said of uterine fibroids applies equally well to ovarian cysts. Sometimes enormous cysts do not give rise to pain. As in the case of fibroids, it is always well to ascertain the condition of the appendix whenever a laparotomy is performed for an ovarian cyst which has been accompanied by abdominal pain, especially if the case is not complicated by a twist of the pedicle or salpingitis.

Salpingitis and Appendicalgia.—Salpingitis frequently coexists with chronic appendicitis. In the past year, Guinard has had twelve such cases. In this connection, Guinard reports a case wherein the right tube and ovary were removed for sclerocystic disease of the latter. The patient was later relieved of her abdominal pains by the author through removal of a diseased appendix.

Movable kidney is often thought to be the cause of abdominal pains when in reality the appendix is at fault. Two cases are cited in support of this statement. In one of these, nephropexy was performed for pain in the right side of the abdomen associated with movable kidney. The pain only ceased a year later after the removal of a diseased appendix.

Numerous examples are cited to show that abdominal pain is often ascribed to uterine prolapse and metritis when, in reality, it is due to chronic appendicitis. It is also worthy of note that in some cases of supposed dysmenorrhea in young girls, where abdominal pain occurs before, during or after the menses, the source of the difficulty lies not in the uterus or appendages, but in the appendix.

R. P.

OBSTETRICS.

By WILLIAM HORACE MORLEY, Ph. B., M. D., Ann Arbor, Michigan.
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PURSUING STUDIES AT BERLIN UNIVERSITY.
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THE USE OF SILVER NITRATE IN THE EYES OF NEWBORN CHILDREN.

Bischoff (*Zentralblatt für Gynekologie,* Number X, 1903) has an interesting article on this subject and in one hundred cases reports his investigations with a two per cent silver nitrate solution in the eyes of newborn children. The author states that the efficacy and remote effects of this drug are still in dispute, although it is nearly twenty years since Credé discovered that a two per cent solution of silver nitrate acted as a prophylactic against ophthalmia neonatorum.

Cramer (*Archiv für Gynekologie,* Band LIX) is cited as opposing the use of silver nitrate, for in fifty per cent of his cases he got a severe conjunctivitis, which often resulted in a secondary catarrh. Cramer's results differ from those of Engleman, Leopold and others, who always employ a two per cent silver nitrate solution as a routine prophylactic against gonorrheal ophthalmia of the newborn.

Bischoff, in his investigations, used a two per cent silver nitrate solution, and reports only a slight deleterious reaction from its employment. Secondary catarrh did not result in a single case. When a slight secretion was present, the eyes were carefully wiped out twice a day, as Bischoff contends that other manipulations are both injurious and superfluous. Mothers and attending nurses should be warned not to wipe out the child's eyes every time a slight secretion appears, as a troublesome conjectivitis often results from these repeated manipulations. The author is of the opinion that the feebleness of the child, tedious and prolonged labor, and operative interference have no effect whatsoever on the later appearance of a conjunctivitis.

Silver acetate (one per cent solution) and protargol have been recommended as substitutes for silver nitrate. Good results have also been obtained by Leopold, Runge and Gusserow with a one per cent silver nitrate solution. W. H. M.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.
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METHODS OF CONTROLLING HEMORRHAGES OF THE ORAL CAVITY.

Henry D. Belden (*Journal of the American Medical Association,* February 13, 1904) considers the hemorrhage from various portions of the mouth, especially from the tooth socket after extraction. He divides the treatment into mechanical and medicinal. He mentions the more common methods as compression, plugging, et cetera, and quotes Doctor Mesur as to the value of powdered charcoal after extraction. The charcoal is dusted on the bleeding part, or packed into the alveolus by means of cotton. Its action is supposed to be merely a physical one. The powder is washed out after the hemorrhage ceases. Mention is also made of packing the cavity with gauze. The medicinal use of calcium chloride in from eight- to sixteen-grain doses every two to four hours is advised in all forms of persistent hemorrhage. It increases the coagulability of the blood.

Ochsner's method of treatment by giving four to six whites of eggs three times daily is mentioned.

Gelatin in from one hundred to four hundred grains is also advised. Caution is given about its use subcutaneously for fear of tetanus. Adrenalin is indorsed by the writer. Instances are cited wherein the actual cautery was of service. The author regularly treats hemorrhage from a tooth socket by washing out the cavity with peroxide of hydrogen followed by an antiseptic solution.

REPORT OF TWO CASES OF A CONGENITAL DIAPHRAGM IN THE LARYNX.

Doctor Johann Fien (*Wiener Klin. Rundschau,* December 27, 1903) reports two cases and states that the condition is a rare one. He found only eleven reported cases. It is not easy to diagnose the congenital from the postnatal membranes.

Case I.—A woman, aged twenty-four. Family history negative. Hoarseness commenced when she was seventeen, at first intermittent, and then constant. Dyspnea on exertion since childhood. No other respiratory affection. Examination revealed no evidence of syphilis or tubercle, nor any disease of nose or pharynx. The cords were movable, but the anterior half of each cord was joined to its fellow by a membrane of white tissue, which blends imperceptibly into the mucous membrane laterally, and presents a concave border posteriorly during inspiration. It becomes doubled during phonation. Doctor Fien removed the membrane by cutting and scraping the parts. The raw edges united in spite of the daily passage of instruments to keep them open. A month later he again operated and passed bougies daily, that failing he used Schroetter's tube. Treatment was finally abandoned on account of the pain caused by the treatment. The cords remain movable although there is a firm adhesion at the site of operation.

Case II.—A woman, aged sixty-five years. She complained of heart disease and dyspnea. Family history negative. Nose and throat normal. For a year she complained of cough, dyspnea, feeling of constriction, et cetera. Between the cords posteriorly was a firm white band, smooth, shining and of even thickness. The anterior border of this band ended at the processus vocalis on either side. From the appearance it was considered congenital in nature. The heart condition was considered functional in character. No operative treatment was undertaken.

The reviewer has successfully treated cicatricial stenosis of the larynx by intubation. The tube should be removed daily, cleansed and reintroduced. The size of the tube may be gradually increased until an adult tube can be worn. The continual wearing of the tube prevents the adhesions reforming. The method should be useful in the cases described above. After the division of the membrane, a tube should be worn until complete healing has taken place.

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY, M. D., Ann Arbor, Michigan.
LECTURER ON DERMATOLOGY AND SYPHILOLOGY IN THE UNIVERSITY OF MICHIGAN.

"THE PASSING OF ECZEMA."

In an editorial in the January number of the *Journal of Cutaneous Diseases,* under the caption of "The Passing of Eczema," Doctor Hyde truly expressed what has doubtless been in the minds of many observers:

* * * "Dermatitis has been clothed with a new dignity since the culture tubes, and the stained sections of the laboratory have declared what in many cases it represents." * * *

There are a few experts who now use the term eczema without a species of mental reservation or qualification. There is no eczema in the absence of dermatitis: Is there any dermatitis without some of the accepted symptoms of "eczema?"

THERAPEUTICS.

By DELOS LEONARD PARKER, Ph. B., M. D., Detroit, Michigan.
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THIRTY YEARS EXPERIENCE WITH CRUDE PETROLEUM AS A THERAPEUTIC AGENT.

A. D. Binkerd, M. D., of West Monterey, Pennsylvania (*The Therapeutic Gazette,* December, 1903) tells of various therapeutic uses to which he has put crude petroleum in the course of his practice. He first says that petroleum as it comes from nature's laboratory is an exceedingly complex body and varies greatly in different regions. For instance, in California it is not unusual to find oil with a specific gravity of 9° Beaume, while along the western slope of the Appalachians it is often found with a specific gravity of 40° Beaume.

The heavy oils are dark in color and contain much sulphur and bitumen, and emit a vile odor. The lighter oils have a paraffin base, a much less offensive odor, and a taste somewhat resembling freshly drawn Jersey milk.

As to the value of the different kinds of oils for therapeutic purposes Doctor Binkerd is undecided. On account of the disagreeable taste and odor of the heavy oils he has avoided their use, yet he says they may prove to be of as great value as the lighter ones. The doctor's experience, then, should be taken to apply to the use of the lighter or paraffin oils.

The first experience Doctor Binkerd had with the internal use of petroleum was in the treatment of acute affections of the respiratory tract. In diseases of this region characterized by stridulous breathing, harsh and brassy cough and cyanosis, results have never been anything but most satisfactory during a period of thirty years.

The doses recommended by Doctor Binkerd are from a half to one teaspoonful repeated every four hours.

Besides affections of the respiratory tract various abnormal conditions of the alimentary canal are benefitted by its use, gaseous fermentation, hemorrhoids, rectal prolapse, loss of appetite and constipation being especially referred to.

As to tolerance of the oil by the stomach, mention is made of one case in which it had been taken daily for two years with no development of a distaste for it.

Doctor Binkerd says in his opinion petroleum is not a food. "It is not absorbed nor assimilated. It is probably not a tonic nor yet a stimulant. It is not analgesic. It is not affected by the secretions of the intestinal organs. Neither acid nor alkali can act upon it chemically, nor destroy its identity. It passes through the entire length of the digestive tract unchanged. The ingested oil may all be collected from the feces. Neither bacteria nor bacilli of whatever species can propagate or exist in pernicious activity in its presence. It is therefore a complete intestinal antiseptic, disinfectant, and antiferment, while it is as harmless as pure water."

Numerous experiments are described in which individuals after eating freely of foods likely to produce the development of gas in the intestines took full doses of the crude petroleum with the result in every instance of escaping inconvenience.

The same remedy in half teaspoonful doses repeated every four hours is said to have produced satisfactory results in typhoid fever.

EDITORIAL COMMENT.

"PRIVATE RETREATS" AND BABY-FARMS.

ONE has only to read the reports in the daily press to learn how bold is the abortionist in his or her pursuit after gain. "Private retreats" are advertised where everything is made easy and pleasant for the poor woman who finds herself illegally pregnant. Such advertisements are carefully worded, but are quite clear to one reading between the lines. There are dozens of similar places in the larger cities unadvertised in the press. These institutions and their proprietors are exploited by the people they have helped out of their difficulties. A certain portion of the community spread the news of the existence of such places. They may at any time through their transgression of moral law need to know where to send their victims for assistance. There is an underground world in the abortion business as much as there is in other divisions of the criminal world.

* * *

In fact, the time seems ripe for a thorough investigation by the proper authorities of "private retreats" and so-called baby-farms. The abortionist and the wretch who presides over the baby-farm are becoming altogether too bold in their nefarious pursuits after gold. Occasionally the crimes perpetrated at these places are exploited in the public press. Yet, so much that is sensational is dished out to the public daily, that it requires something as horrible as the Iroquois fire to attract more than a passing interest. The past ten years have witnessed a most astonishing increase in the number of hospitals, both public and private. Private institutions for the care of the sick are now common, not only in the cities, but in the smaller towns. In the aggregate, much good has resulted from this movement. Medical and surgical patients have all the advantages of hospital treatment without the fear and dread that the larger institution sometimes entails. Yet this very multiplicity of smaller hospitals makes the establishment of the illicit retreat comparatively easy. In the eyes of the public, a hospital is a hospital. For this reason, it is necessary that the people be protected by the establishment of the strictest supervision over private institutions. Experience has shown this to be necessary in the case of physicians and those claiming to be graduates of medicine. A few years ago, registration with the county clerk and the payment of a fifty-cent fee enabled anyone, whether a graduate or not, to practice medicine. Now the State Board of Registration requires examination in every case, before a certificate to practice is granted.

* * *

The same idea of supervision holds good in the case of an establishment in which are placed unfortunate babes, the products of illegitimacy. It seems almost incredible that there exist wretches who will deliberately neglect, starve, and allow to die infants placed in their care. Yet such baby-farms do exist and will continue to exist until stamped out by the proper municipal supervision. We are in duty bound to protect the young woman, the victim of misplaced confidence in her lover. We are doubly bound to protect the helpless infant. How can this protection be best secured? The question is not so easily answered as would at first appear. Human passion and frailty and the desire to escape the consequences thereof give rise to the abortionist and the keeper of the baby-farm. These creatures would soon be without an occupation if the world could be made suddenly good and moral, but the millenium is not here and as practical people, we know that the transgressors of moral laws will remain with us for a while yet.

* * *

Let us turn, then, to the other side of the proposition. It may be said, shut up the institutions under discussion. Good and well, this should be done, but will it do away with induced abortion and illegitimacy? It is not only doubtful but experience in another direction is opposed to it. It has been proved that to close houses of prostitution means not the suppression of the vice, but its transference to rooms and flats. Stringent laws and police supervision are effective in proportion as they are upheld by public opinion or the customs of a community. States which have been for prohibition these many years are returning to high license because they have found prohibitory legislation ineffective. Fanaticism in legislation is as harmful as it is in other walks of life. The question must be looked at clearly and dispassionately. You cannot drive out the abortionists by legislating against them. You can hurt his business by offering the unfortunate pregnant woman a safe harbor of refuge where her physical needs will be attended to and her good name preserved. In a given community, a certain proportion will transgress the moral law and a certain number of pregnancies will result. What course shall we pursue with these unfortunate women? Shall they be looked upon as moral lepers, as scarlet women, as persons forever damned? Shall the woman who has believed in and yielded to her lover be forever disgraced? Shall she be cast off so that in her desperation she may fall a ready victim to the abortionist? Strange as it may seem, this is the attitude of certain members of the community. They claim that to hold out a helping hand to the unfortunate, to shield her good name and give her another chance in the world is simply abetting and encouraging immorality. To the credit of the medical profession, let it be said that the rank and file hold entirely different views. The physician usually is the first person consulted in these cases. From force of circumstances, not only must he supervise his patient's welfare, but he is called upon to preserve her good name also. Even when the couple can be persuaded to marry, the good name of the woman cannot always be preserved. The physician must send the patient away for her confinement and see that her child afterward is properly cared for. Where shall he send her? This is often a most perplexing question for the patient and her immediate family may be without means.

* * *

Right here is where the State should come to the rescue and offer a place for shelter, physical and moral. For the patient, in a large proportion of the cases, is not a dissolute woman, but simply the victim of misplaced confidence, and for such as she there should be provided an adequate State maternity hospital. The State provides for its other unfortunates, why should it neglect this class? The insane, the epileptic, the blind and the feebleminded are all cared for by the State. If the objection be raised that the mother acted of her own free will and therefore has no right to expect protection from the State, we still have to take into consideration the latter's duty toward the unborn child. The life of the fetus is protected by law, except when the life of the mother is in danger. Yet, how much better it would be protected could the child be born into the world under surroundings such as exist in the modern maternity hospital. The first few weeks of an infant's life are the most hazardous. During this period, it should be watched over and guarded and, in this way, many a valuable life would be saved. Later on, it could be sent to a proper institution or, what is better, it could be placed where the mother could support it and yet preserve her good name. It would be comparatively easy for the State to look after and protect these helpless infants. If this were done, the occupation of the baby-farm keeper would be dug up by the roots.

R. P.

CONTEMPORARY.

THE PSYCHOLOGY OF OCCUPATION.

[THE MEDICAL AGE.]

After many years of inquiry an Italian savant, Ferriani, has constructed a scale showing the varying degrees of professional jealousy that exist in the different professions. He finds that among architects there exists the least. Following them come clergymen, lawyers, and military men. After these he places professors of science and literature, journalists, authors, doctors, and actors. From his classification it would seem that in only one other profession does jealousy exist to the extent that it does in medicine. It is indeed unpleasant to think that this investigator is right, but candor compels us to acknowledge to ourselves that we are a jealous lot. The average medical man is a good fellow among his colleagues until he commences to reach the top, and then he is immediately looked on with jealousy, and many mean and vicious remarks are made about him which would have been left unsaid had he never risen above mediocrity.

MEDICAL NEWS.

A DISTINGUISHED VISITOR.

Doctor Frank Billings, of Chicago, will be the invited guest of the Washtenaw County (Ann Arbor) Medical Society on Tuesday, May 24. During the afternoon a medical clinic, to which all physicians are welcome, will be conducted in the east amphitheatre of the University Hospital, beginning at 2 o'clock. In the evening the medical guild will assemble in the New Medical Building at 8 o'clock for the purpose of listening to the doctor read a paper entitled "The Changes in the Spinal Cord in Pernicious Anemia," with lantern slide exhibit of sections of the cord. A dinner will be tendered the visitor by Doctor Dock.

A DISCIPLE OF HYPNOTISM.

Doctor Ambroise A. Liebault, of Nancy, France, is dead, aged eighty years. The doctor was an ardent advocate of hypnotic suggestion in the treatment of disease. He pursued medical studies in Strassburg and received the degree of Doctor of Medicine in 1850. A short time afterward he directed his attention to hypnotism and established a clinic in Nancy for the treatment of poor people by suggestion. Although regarded as an imposter for many years by the conservative element in medicine, his principles were eventually accepted by such men as Bernheim, Beaunis, and Liégeois and the Nancy School of Psychotheraphy was founded with their cooperation. He was honorary president of the first and second congresses of hypnotism.

MINOR INTELLIGENCE.

With a population of less than twenty-five thousand, Watertown, New York, has suffered from more than five hundred cases of typhoid since January 1.

A bill which provides for compulsory vaccination, to be under the direction of the Board of Health, will be presented at the next session of the Pennsylvania legislature.

PHILADELPHIA is suffering from an epidemic of typhoid fever, over three hundred cases having been reported during the week ending April 2. Several cases of scarlet fever, diphtheria and smallpox were reported during the same week.

A HOUSE and twenty acres of land in Delaware County, Pennsylvania, has recently been purchased and equipped as a hospital, by Doctor Edward Martin, of Philadelphia. The building will be devoted to the treatment of sickly children.

THE old Madison Avenue Hotel, at the corner of Fifty-eighth street and Madison avenue, New York, is to be remodeled and fitted with apartments exclusively for physicians. A plot of ground ninety-five by one hundred feet is covered by the building, which is six stories high.

THE use of beer in large quantities is regarded by a German scientist as a cause of cancer. Investigations in several countries of Europe have revealed the fact that the districts in which the greatest amount of the liquor is consumed show the highest death rate from cancer.

THROUGH the philanthropy of Mr. Robert M. Bruce and his sister, Sarah E. Bruce, Greenwich, Connecticut, is to have a group of four stone hospital buildings, three of which will be designed for infectious diseases and one for emergency cases. The combined cost of the structures will be $75,000.

A PHILADELPHIA physician, by the use of radium, is said to have restored the sight of a man, who was totally blind. The cause of the affliction was paralysis, and partial atrophy of the optic cell had occurred. Cure is said to have been effected by stimulation of the remaining normal cells.

A MANDATE has been issued by the Board of Health of New York City, which prohibits street car conductors from moistening their fingers with saliva in order to separate transfers. The action was inspired by the death of a conductor from lockjaw brought on by a cut received from a dirty transfer.

MAYOR E. G. SWIFT, of Walkerville, Ontario, for the past ten years manager of the Walkerville branch of Parke, Davis & Company, was recently elected by the directors of this corporation to the general managership vice William M. Warren, deceased. Mr. Swift has been with the firm twenty-two years and has achieved his present position by successive promotions.

THE yearly increase in the number of mental incompetents in New York State is very marked. For six years past the average increase for each year has been seven hundred eight, but in 1903 the increase over the preceding year was nine hundred forty-one. There are at the present time over twenty-six thousand insane persons confined in the various asylums of the state.

A MARKED decrease in the death reate of Brooklyn, where a proportion of 18.15 for every one thousand persons was recorded, has been observed during the past year. The improved condition in the health of the city is directly traceable to the excellent sanitary system which now prevails in the tenement district.

AN Italian physician, who is endeavoring to establish the cause of sleeping sickness, has found living trypanosomes in the cerebrospinal fluid of several persons suffering with the disease who have been under his observation. In a number of other patients not afflicted with sleeping sickness none of the organisms were found.

LONDON is waging war against rats which infest the dock district of that city. Over five thousand of the rodents are being killed monthly and more than a quarter million have already perished. The raid is being conducted not only because the pests disseminate disease, but also because of the destruction they wreak in the warehouses.

DOCTOR J. PERCY WADE, superintendent of the Maryland Hospital for the Insane, considers alcohol a very prominent factor in the causation of insanity. Mental disorders of this type are, however, quite susceptible to treatment, according to a recent report to the trustees, in which the doctor estimates that sixty per cent of the patients are curable.

DURING the month of February, according to statistics compiled by the health department of New York, over twelve thousand persons died in the state. This average of four hundred forty-four deaths per day is an increase over preceding months and is due chiefly to the prevalence of pneumonia, nearly two thousand persons having succumbed to that affliction.

THE Cincinnati Academy of Medicine elected the following officers March 7, 1904: President, Doctor S. P. Kramer; first vicepresident, Doctor J. M. Withrow; second vicepresident, Doctor Julia Carpenter; secretary, Doctor S. E. Cone; treasurer, Doctor M. A. Tate; librarian, Doctor Arch. I. Carson; board of trustees, Doctor E. G. Zinke, Doctor J. F. Heady, Doctor D. I. Wolfstein.

THE City Hospital, of Newark, New Jersey, has received, through the mayor, a gift of twenty-four thousand dollars from the estate of Joseph Nichols, whose death occurred about twenty years ago. The administrator of the estate, after presenting several other bequests, placed eleven thousand dollars in a savings establishment, where it has since remained, the interest increasing the amount to the magnitude of the gift.

A REMARKABLE story is related of a farmer who experienced the misfortune of having his index finger completely severed in being bitten by a pig which he was butchering. He picked up the finger and walked six miles to the nearest physician, who, after cleansing the member bound it in its former place by means of splints and bandages, with the result that perfect circulation was established and complete recovery effected, although nerve union did not take place.

ALCOHOL is said to play an important role in the causation of insanity in France. Of eighty thousand persons afflicted with mental diseases in that country twenty-five per cent are said to owe their condition to the use of the drug. This vast army of mental incompetents annually costs the state over 7,000,000 francs.

RECORDS which have been kept by the state of Connecticut disclose the fact that insanity is much more prevalent among the foreign element in that state than among American born. Lunacy has, however, made rapid progress among the native population of late years but not to the extent that has obtained among foreign born.

THE American Gastroenterological Association will hold its seventh annual meeting at Atlantic City, New Jersey, June 6 and 7, 1904. The preliminary program announces a "Symposium on Gastric Ulcer," which will comprise fifteen contributions. Also a paper, "Concerning Heterochylia," the discussions on which will be limited to five minutes. The annual dinner will be served on the evening of the first day.

DOCTOR JOHN C. MITCHELL, of Toronto, has been appointed medical superintendent of the Provincial Epileptic Hospital now being constructed at Woodstock. The Ontario government made the appointment at this time in order to give the appointee an opportunity to visit similar institutions in other countries before assuming the duties of his new position. The doctor has been a member of the Toronto asylum staff for some time.

A GERMAN physician is said to have perfected a process whereby dead bodies can be silver-plated as a means of preservation. The process converts the bodies into metallic images, the features of the individual being the same as in life. Estimate places the cost of the operation at about $12,500, but if relatives of the deceased wish a more expensive plate gold may be employed. It is hardly probable, however, that the method will gain favor, except among the extremely wealthy.

THE use of the mails were recently denied to the Imperial Drug Company, 280 Broadway, New York. This firm offered a music box as a premium to persons selling six boxes of their pills at twenty-five cents a box. A successful vender found that he had to sell an additional ten dollars worth in order to secure the musical apparatus. The promise specified in the advertisement was not fulfilled and consequently Postmaster-General Payne issued an order refusing mail service.

AN unusual operation is reported in a medical journal as having been performed in Philadelphia. A negro was stabbed in the heart by a woman, the resulting wound being large enough to require six stitches, yet the patinet, unassisted, walked five blocks to a hospital for surgical treatment. The injured organ was lifted from the thorax, through an opening effected for the purpose, and after being sutured was returned to its normal position. The man, although extremely weakened by the operation, soon rallied, and hope is entertained for his recovery.

THE following notice speaks for itself. It was prepared by the University of Michigan authorities to answer the numerous letters—some of them very pathetic—inquiring about the "radium water" cure for cancer. It has been learned that many physicians, not only in distant parts of the country but in Michigan, had supposed the "treatment"—so-called—was practiced in the regular University Hospital: *Notice.*—The authorities of the University do not hold themselves responsible for the reports in circulation in the public press concerning the use of "radium water," so-called, in the treatment of cancer; and hereby notify patients not to come here in the expectation of receiving such treatment.

RECENT LITERATURE.

REVIEWS.

DISEASE OF THE PANCREAS: ITS CAUSE AND NATURE.*

THE publication of a book of this nature may be looked upon as a most encouraging sign in these days when medical publishers seem to be devoted to the rapid multiplication of composite text-books, systems and manuals of superficial character. American medical literature has been too much a thing of the latter description, and the appearance of a book so scientific in character and so devoid of the commercial halo as is this work, marks, we may well hope, the beginning of an era in American medical publishing when new books will be published for their worth even when the hope of a financial return may not be so great as in the case of a more rapidly selling book of the other type. The great interest attaching to recent experimental researches concerning the physiology and pathology of the pancreas makes the appearance of this book especially timely, and the fact that the author, Doctor Opie, has been prominent in such research is in itself a promise that its contents will include the results of the latest investigations in this field of work. Such researches have not as yet been incorporated into the majority of text-books, and as a rule the chapters upon the diseases of the pancreas are prefaced by some statement concerning the obscurity of our present knowledge concerning this subject. Exaggerated dicta concerning the infrequency of pathological conditions of this gland are also usually made. For these reasons such a consideration of the latest knowledge concerning the pancreas and its diseases as is here given must be of the very greatest interest and value, not only to the scientific worker in medicine but to the student and practitioner as well. The recognition of pancreatic lesions is of the greatest importance both to the physician and the abdominal surgeon. Few conditions present greater difficulties of diagnosis than do the different forms of pancreatic disease, and any increase in the knowledge of their etiology, pathogenesis and relation to other diseases offers hope for advance in the recognition of such. The book is divided into thirteen chapters, the first three treating of the anatomy, anomalies and histology of the pancreas. The varieties of acute pancreatitis are considered in the fourth, and in the fifth the etiological relation of gall-stones to acute hæmorrhagic pancreatitis. Fat necrosis and chronic interstitial pancreatitis are considered in the next three chapters, hyaline degeneration of the pancreas in the ninth. The tenth and eleventh are given up to a discussion of pancreatic diabetes, the twelfth to hæmochromatosis and bronzed diabetes, while the final chapter gives a general discussion of the symptoms and treatment of pancreatic disease. The book is well printed, and the illustrations, though few, are well chosen. It should be read by every worker in medicine, whether student or practitioner.

*By Eugene L. Opie, Associate in Pathology in the Johns Hopkins University, 359 pages, 21 figures. J. B. Lippincott Company, Philadelphia and London, 1903.

A DICTIONARY OF MEDICAL SCIENCE.*

THE twenty-third edition of "Dunglison's Dictionary" may be unreservedly recommended to every physician and student of medicine. The revision has been carried out by Doctor Thomas L. Stedman, the editor of the medical terminology of the "Standard Dictionary." The ability and conscientiousness of the revision deserve the most unqualified praise. The make-up of the book is most excellent, and it has been enriched by numerous illustrations. The explanatory fulness and encyclopedic character of the definitions make the book not a mere lexicon but an epitome of the present status and condition of medical science. Words are not simply defined, they are explained. The great increase in medical terms during the last several years (at the rate of two per day) has made it necessary to cut out dead and useless words which have no relations with modern medicine. In their place appear the latest words and latest meanings. In this respect the volume is as nearly up to date as any dictionary can well be. Nevertheless we note with surprise the omission of "anlage," a term used as an English word by a number of writers during the last several years, and which fills a place not held by any other word in our language. The criticisms that may be advanced against the book are, however, of minor importance, and it is a volume that should find a place in the library of every physician and student of medicine.

*Containing a full explanation of the various subjects and terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Bacteriology, Pathology, Surgery, Ophthalmology, Otology, Laryngology, Dermatology, Gynecology, Obstetrics, Pediatrics, Medical Jurisprudence, Dentistry, Veterinary Science, et cetera. By Robley Dunglison, M. D., LL. D., late Professor of Institutes of Medicine in the Jefferson Medical College of Philadelphia. New (twenty-third) edition, thoroughly revised, with the pronunciation, accentuation and derivation of the terms, by Thomas L. Stedman, A. M., M. D., member of the New York Academy of Medicine. In one magnificent imperial octavo volume of 1224 pages, with about 600 illustrations, including 85 full-page plates, mostly in colors, with thumb-letter index. Cloth, $8.00, net; leather, $9.00, net; half morocco, $9.50, net. Lea Brothers & Company, Philadelphia and New York.

EYE, EAR, NOSE AND THROAT.*

THIS little volume gives in a condensed form the review of the literature of the past year. Its aim has been to meet the wants of the busy practitioner, but it will be of distinct value to those doing special work. Reference to the application of *x*-rays in the treatment of ocular neoplasms is made, as one of the most recent advances. The eyesight and hearing of school children are considered under hygiene of the eye. Considerable space is given to middle ear and mastoid diseases. The work of Dunbar on the cause and cure of hay fever is reviewed. Among the more recent advances referred to are paraffin injections, sinus disease and Vincent's angina. It is impossible in a small volume to cover the whole field, but the editors have selected wisely the more important subjects.

*By Doctors Wood, Andrews and Head. Practical Medicine Series, December, 1903. Published by the Year-Book Publishers, Chicago.

THE LYMPHATICS.*

A THOROUGH knowledge of the lymphatic system acquires more practical importance from day to day, and an acquaintance with the histology and physiology of the lymphatics as well as with their arrangement and distribution, becomes more and more essential to the practitioner, both physician and surgeon. The present volume is a section of the well-known work on human anatomy edited by Poirier and Charpy. It is divided into two parts, the first treating of the General Anatomy of the Lymphatic System, the second being devoted to a Special Study of the Lymphatics in different regions of the body. Great care and accuracy have been bestowed upon these subjects, and much of the recent work upon the lymphatics has been included. The full bibliography given is a feature of very great value. An important omission is noticed in the very scant reference given to the hemolymph glands. A serious disadvantage is the lack of a full index. A number of typographical errors are noted and some of the illustrations may be criticized. The volume nevertheless is a very valuable one and should be in the possession of every student of the human body. The special study of the regional lymphatics offers much of interest to the surgeon.

*By G. Delamere, P. Poirier and B. Cunéo. Authorized English edition by Cecil H. Leaf; 301 pages, 117 illustrations and diagrams. W. T. Keener & Company, Chicago.

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ORIGINAL ARTICLES.

MEMOIRS.

THE PRESENT STATUS OF STREPTOCOCCUS AND TETANUS ANTITOXIN INJECTIONS.

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PROFESSOR OF HYGIENE AND PHYSIOLOGICAL CHEMISTRY, DIRECTOR OF THE HYGIENIC LABORATORY AND DEAN OF THE DEPARTMENT OF MEDICINE AND SURGERY IN THE UNIVERSITY OF MICHIGAN.

STREPTOCOCCUS.

Toxin.—Reports of recent work on the streptococcus toxin have been unsatisfactory, and to some extent conflicting. Besredka (*Annals de l' Institut Pasteur,* Number XV, 1901, page 880) obtained a hemolytic filtrate from cultures of the streptococcus. The culture medium employed consisted largely of the serum of rabbits. This was heated to 55° in order to destroy any alexins that might be present, after which it was inoculated with the heart's blood of an animal that had been killed by inoculation with a virulent streptococcus. Such cultures were filtered after eighteen or twenty hours and were found to have a hemolytic effect, which was destroyed by the application of heat at 70° for two hours. While these cultures had a hemolytic action they were not toxic, for it was found that rabbits bore as much as thirty cubic centimeters without apparent ill effect. Hemolytic action did not show itself in the animals thus treated. While this communication from Besredka has some scientific value, it gives us no information concerning the real toxin of the streptococcus.

Marmorek (*Annals de l' Institut Pasteur,* Number XVI, 1902, page 161) prepared a toxic culture of the streptococcus in the following manner: Guinea pigs were partially immunized by the administration of from two to three large doses of antistreptococcus serum, after which ten cubic centimeters of bouillon was injected into the abdominal cavity. Some days later the animal was killed and the peritoneum washed out with physiological salt solution. The fluid thus obtained, and which contained a suspension of leucocytes, was mixed with the serum of another guinea pig in the proportion of one to three. The streptococcus was planted in this mixture, then transplanted into a second culture of the same composition, then further transplanted into a special medium which consisted of two hundred fifty grams of pepton bouillon and ten grams of leucin bouillon (0.4 gram leucin to one hundred fifty grams bouillon) and ten grams of glycocoll bouillon (0.5 gram glycocoll to one hundred grams bouillon) had been added. In this medium the germ was allowed to grow for eighteen days and after sterilization it was found to kill rabbits in doses of from 0.25 to 0.5 cubic centimeters. Marmorek came to the conclusion that all strains of streptococci produce the same toxin.

Aronson (*Berliner klinischer Wochenschrift,* XXXIX, 1902, Nr. 42) concludes that the streptococcus does not produce any powerful toxin. He states that the most virulent and richest growths only form small amounts of soluble toxins. He filtered cultures from two days to four weeks old through porcelain and tested the filtrates on rabbits. From ten to twenty cubic centimeters caused local infiltration, elevation of temperature, some loss of weight, and in exceptional cases, death; but the toxin evidently was not very active.

Probably the most important paper which has recently appeared on the toxin of the streptococcus is that of Simon (*Centralblatt f. Bakt.,* XXXIV, page 308, 1903). Simon has also given a good review of the literature of the subject. First he attempted to ascertain whether or not the streptococcus forms a soluble toxin. In this work he used bouillon cultures and some made with ascitic fluid. After such cultures were passed through porcelain and evaporated in vacuo to one-fifth their volume, they were injected into animals, always with negative results, notwithstanding the fact that large doses were employed. For instance, thirty cubic centimeters of a concentrated filtrate, corresponding to one hundred fifty cubic centimeters of the culture, was injected into a small rabbit, weighing eight hundred eighty grams, practically without effect. He also tried Marmorek's leucin-glucose bouillon culture medium, but was unable to obtain in this any toxin. He next turned his attention to the investigation of the intracellular toxin. In this he was somewhat more successful, inasmuch as he found traces of a weak toxin in the cells of several strains of streptococci. Simon states his conclusions as follows:

(1) In the cellular substance of streptococci intracellular poisons can be demonstrated, but their action is relatively weak and uncertain, so much so that the symptoms and the rapidly fatal course of acute streptococcus infection cannot possibly be due to these poisons;

(2) The toxicity of the streptococcus cells is not always proportional to the virulence of the strain employed;

(3) Streptococci excrete toxins, the toxicity of which is markedly greater than that of the intracellular poisons;

(4) The elimination or elaboration of toxin by the streptococcus is independent of the amount of intracellular poison in the cocci;

(5) Streptococci are not permanent toxin builders, as are diphtheria and tetanus bacilli, but they require a certain amount of external stimulation, especially that of the bactericidal juices of the body before they produce soluble toxin. Therefore the condition necessary for the elaboration of a toxin by the streptococcus is that the multiplication of the germ should be interfered with by the antibacterial substances of the animal body;

(6) The toxin and the hemolysin of the streptococcus are two different bodies, which owe their origin to different conditions. Furthermore, it is highly probable that the streptococcus produces a hemolysin only when it can no longer elaborate a toxin, that is, when it is overcome by the antibacterial substances of the body.

Simon injected sterilized preparations of alluron into the pleural cavity of rabbits, and then removed the exudate which formed as a result of these injections, allowed these exudates to stand for some days in the icebox in order that the leucocytes might be deposited, and then separated them more completely from cellular elements in the centrifuge. Using the filtrate thus obtained as a medium, he grew his streptococcus, and found that soluble toxins were produced. He found it necessary generally to dilute the pleuritic exudate with bouillon. Unless this was done the streptococcus grew in the exudate very sparingly. As seen above, he attributes the formation of the toxin to the resistance which the streptococcus meets with in its growth in a medium thus prepared. It seems to me that while Simon's work has marked scientific value, his conclusions do not necessarily follow from the experiments that he made, and the results that he obtained. It is certainly possible that the formation or the splitting off of the toxin from the cellular substance does not occur when the dead germ is used, and occurs only when the living germ is in contact with certain constituents of the animal fluids, but it is not necessary to conclude that those constituents of the animal fluid which are necessary for the development of the toxin are antibacterial substances. As yet we know too little concerning the conditions necessary for the splitting up of the molecules within the bacterial cells. In order for us to gain knowledge on this point we must know more about the chemistry of the bacterial cell. We must ascertain whether or not this molecule which constitutes the essential part of the bacterial cell has certain definite lines of cleavage, and what the conditions are and must be before the molecule will split along such lines. It is to be hoped that in the near future we will have some more definite knowledge concerning the streptococcus toxin. That such a substance exists, there can be no doubt. That it is intracellular in origin there are many reasons for believing; but we are ignorant of the conditions under which the toxic part of the bacterial molecule is split off from its other constituents. Until we have the streptococcus toxin in fairly large amount, it will be quite impossible for us to have or to produce an antitoxin of definite reliable strength. In case of the diphtheria and tetanus bacilli, the toxic fragments of the cellular molecule drop off from their molecular combination in the presence of water or other fluid, and we have in filtered cultures of these organisms the free toxin, which we can obtain and by its effects upon animals, we can measure the strength of the toxin, but this is not the case with the streptococcus, and until we succeed in obtaining the streptococcus toxin in solutions, the strength of which we can definitely estimate, it must remain impossible for us to obtain a standard streptococcus antitoxin.

Aronson's Antitoxin.—At present there are numerous streptococcus antitoxin preparations before the medical profession. These differ from one another in the strain of the germ employed in preparing them, in the animal immunized, and in their strength. Not only does one preparation differ from another, but there is no standard whereby it can be determined whether or not a given sample has much, little, or no antitoxic action. Aronson (*Berliner klinischer Wochenschrift,* 1902, Nr. 42) has worked laboriously to furnish the profession with a reliable streptococcus antitoxin. He has studied strains of the germ obtained from the anginas of scarlet fever and diphtheria, from follicular angina, rheumatism of the joints, fatal sepsis, phthisical sputum, and from the glandular disease of horses prevalent in Germany. In order to make rabbits more susceptible, these animals have been treated simultaneously with small doses of diphtheria toxin and with streptococcus cultures. Animals thus treated die within three to four days, and Aronson has found that the heart's blood taken from these animals contains an organism, the virulence of which is so increased that when inoculated into rabbits without the help of the diphtheria toxin it will cause death. By successive passages through animals he has obtained a culture, 0.000,000.01 of a cubic centimeter of which injected into white mice will cause death in forty-eight to thirty-six hours; and 0.000,000,1 of such a culture injected subcutaneously into rabbits will cause death in about two days. These most virulent cultures, which grow on properly prepared media abundantly, produce only traces of soluble toxin. With this highly virulent culture, Aronson has immunized horses and goats, and the blood serum of these animals has been used in the treatment of scarlet fever and other diseases in which the streptococcus is known or is supposed to play a part. Aronson has attempted to establish a standard for his antitoxin, and he proposes that an immunity unit shall contain as much antitoxin as is contained in one cubic centimeter of normal serum, and by normal serum he means one, 0.01 cubic centimeter of which suffices to protect a mouse against an infection which kills the control within forty-eight hours. Upon this basis he has prepared sera of from twenty to twenty-five immunity units. He obtains agglutination with his serum, and claims that this cannot be secured with any other antistreptococcic serum. However, he understands by the term agglutination a somewhat different phenomenon from that observed in Widal's reaction. Aronson states that agglutination of streptococci with his serum takes place very slowly even at incubator temperatures, and that it is not hastened appreciably by the addition of a larger proportion of serum. Therefore agglutination with Aronson's serum cannot be observed microscopically by mixing a drop of a bouillon culture with the serum at ordinary temperature. Furthermore, he claims that his serum contains a specific precipitin. He also claims that immunizing with scarlet fever streptococcus gives him a serum which protects animals from streptococci from other sources, such as erysipelas, diphtheria, sepsis, angina, and articular rheumatism. Likewise a horse, immunized against a septic coccus, furnishes a serum which protects against scarlet fever and angina streptococci.

Tavel's Antitoxin.—Tavel, (*Klin. therap. Woch.*, 1902, Nr. 28 and 33) does not believe in the unity of different strains of the streptococcus, and he attributes the failure of Marmorek's preparation to this fact. Tavel's antitoxin is prepared by treating horses first with dead cultures, and then with gradually increased doses of highly virulent cultures of different strains, all of which, however, must have come from man, and which must not be passed through animals. Tavel's antitoxin has been called a polyvalent serum.

Moser's Antitoxin.—Moser (*Wiener klinische Wochenschrift*, 1902, Nr. 41) has prepared a special serum for the treatment of scarlet fever. The streptococcus used in immunizing horses is obtained from cases of scarlet fever, and is not carried through animals other than the horse in which the serum is prepared.

Marmorek's Preparations.—Marmorek has prepared at different times several varieties of serum. He has used single strains both with and without increasing the virulence by passage through animals, and he has also made a polyvalent serum.

Piorkowski's Antitoxin.—Piorkowski (*Centralblatt f. Bakt.*, 1902, XXXII, 820) has prepared a special serum for the treatment of a disease in horses which occurs in Germany and is known as Pferdedrüse. This is a suppurative, febrile, catarrhal affection of the mucous membrane of the nose and throat leading to the formation of retropharyngeal abscesses. In the fresh pus there is found a streptococcus which appears in long chains. This has been isolated by plate cultures, and has been found to be highly virulent. Horses are treated with gradually increased doses of cultures of this organism, and a protective serum has been made. The protective action of the serum can be tested upon mice, or by the agglutination phenomenon. Piorkowski claims that treatment of the disease with this serum has given quite uniformly good results. The initial dose recommended is ten cubic centimeters, which may be repeated and increased if indications demand. It is furthermore claimed that agglutination enables one to distinguish this streptococcus from others, inasmuch as the specially prepared serum agglutinates the Pferdedrüse streptococcus in dilutions of one to one hundred, while it agglutinates the other streptococci only in much smaller dilutions. He concludes from his researches that there are specific strains of streptococci, and that success in the use of an antistreptococcus serum can be obtained only when an antiserum for the specific organism is prepared and used.

There are many other preparations of antistreptococcus serum in Europe but it is hardly necessary to even enumerate all of them. Enough has been given to show that different ideas prevail among those who have been engaged in their preparation.

American Preparations.—Of the three firms in this country preparing and advertising antistreptococcus serum, two have freely given me all the information asked, while the third has declined to answer my questions. One is using a culture obtained from an extremely severe case of facial erysipelas, and the other a culture from a fatal case of scarlet fever; and both are trying cultures from other sources experimentally. Horses are treated with these cultures until they bear relatively large amounts without apparent discomfort, and then their sera are placed on the market. These firms have not discovered a method of standardizing and they have not been able to confirm Aronson's claims.

Practical Tests.—It would be easy to fill a volume with abstracts of papers on the value of antistreptococcic serum, but I will content myself with a few samples.

Sommerfeld (*Centralblatt f. Bakt.*, XXXIII, 722) has tested the sera of Aronson, Tavel, Roux, and Moser as to their protective value, upon animals inoculated with virulent cultures of the streptococcus. It should be understood that these experiments were for the purpose of testing the protective, and not the curative effects of the sera. The serum was given intraabdominally in varying amounts, and twenty-four hours later the animals were inoculated intraabdominally with varying amounts of a virulent culture. As a result of this work, Sommerfeld came to the conclusion that there is a difference in the protective influence of the sera, depending upon the virulence of the culture used. He states that the sera of Roux and Tavel have practically no protective effect against highly virulent cultures, while the sera of Moser and Aronson do protect; the latter, however, being much more active than the former. Considering a normal serum as one, 0.01 of a cubic centimeter of which protects against one hundred times the minimum fatal dose, he would grade Moser's serum as a normal serum, Aronson's as from twenty to fifty times the value of a normal serum. The sera of Roux and Tavel, according to Sommerfeld's conclusions, are of practically no value against either weak or virulent cultures of the streptococcus.

Meyers (*Zeit. f. diatet. u. physikal. Therap.*, 1903, 32) tested Aronson's serum upon his patients, using a preparation from five to twenty times as potent as the normal serum, in small doses. Eighteen cases in all were treated. Five were benefited; in two the disease was possibly influenced for the better by the treatment, and in eleven cases the injections apparently had no effect. The five cases benefited consisted of erysipelas, three; double tonsillitis, one; and puerperal fever, one. The two cases possibly benefited were, one of erysipelas, and the other of peritonitis following an abortion. The eleven cases not influenced even by large doses of the twenty-plus potent serum consisted of erysipelas, three; scarlatinal rheumatism, two; and sepsis, six; the last being in part puerperal, and in part postoperative. The cases of sepsis were all received late in the course of the disease, when any form of treatment would have been futile. In the cases benefited by the serum, a favorable action was noted upon temperature, pulse and subjective symptoms. A rise in temperature, as reported by Menzer after serum injection, was never seen. Exanthemata was noted only occasionally after large doses, and excretion of albumen in the urine in no case. In one instance there was an infiltration area about the point of injection. It was thought that this might possibly be due to the trikresol added to the serum for the purpose of preservation. Meyer thinks that this serum should be used as a prophylactic agent in all operations where there is danger of streptococcus infection, especially those involving mucous membranes; also in confinement during the existence of erysipelas in epidemic form, also in severe anginas, where it is desirable to prevent infection, and to protect the heart. There seems to be need of caution in the use of Aronson's serum, inasmuch as Baginsky had two cases in which untoward results occurred, and were thought to be due to the serum. Meyer recommends as a prophylactic dose from twenty to thirty cubic centimeters, but this amount should be increased in the treatment of active disease to double the quantity. He is of the opinion that the serum is counterindicated where there is marked inflammation of serous membranes. However, he makes an exception in cases of peritonitis. He advises that other treatment should not be neglcted, and points to the value of salol, quinine and aspirin (acetyl-salicylic acid) in the treatment of rheumatism, anginas and pleurisy.

Fischer (*Medical Record,* March 7, 1903) reports two cases of scarlet fever treated with Aronson's serum, according to Baginsky's method. Fischer found that the membranes in the throat melted away after the fourth day, in a very striking manner. The swollen glands in the neck subsided and in every respect the patients rapidly recovered. Although the number of cases treated was limited to two, Fischer feels warranted in endorsing Baginsky's method, and in advocating the use of this serum in the treatment of scarlet fever.

Moser (*Centralblatt f. Bakt.,* XXXII, 642) reports eighty-four cases of scarlet fever treated with his serum. When the serum was used within the first two days there were no deaths. When used later the mortality increased with the interval between the appearance of the disease and the use of the serum, amounting to fifty per cent, when the serum was not used until the ninth day. Under the use of the serum patients generally improved, felt better, temperature and pulse fell rapidly, and the only untoward result, which was a slight erythema, developed in some, soon disappeared. Moser also reports that his serum has been successfully used in Vienna as a protective agent among children who had been exposed to scarlet fever.

Ruth (*Virginia Medical Semi-Monthly,* December 26, 1902, page 413) reports twelve cases of various septic conditions treated with antistreptococcic serum with good effect. There were only two fatal cases, and one of these was shown to be an infection with the staphylococcus. In the other fatal case the serum was used late in the disease. The author states that while all points with reference to the serum are not settled, his experience with it warrants him in saying that in no case of severe sepsis would he consider that he had discharged his obligations of responsibility to the patient until he had used antistreptococcic serum. It does not in any way interfere with any other line of treatment that the surgeon may see fit to carry out. The injections, when properly made, are not more painful than an ordinary hypodermic, and have never caused inflammation or any serious local or general disturbance. He makes the injection deep in the gluteal region.

Bokay (*Deutsche medicinische Wochenschrift,* XXX, 6) used Moser's serum treatment in twelve cases, and was very favorably impressed with the results. No ill effect on the kidneys was apparent in any instance.

Schmidt (*Berliner klinische Wochenschrift,* XLI, Nr. 49) tried Menzer's serum in fifteen cases. Six were unmistakably improved; four only subjectively improved; and in five no effect was apparent. The more pronounced the reaction the better the results observed.

Guizzetti (*La Rif. Medical,* November 11, 1903) concludes from his experiments that this serum is of benefit in puerperal septicemia. The fever falls, the pulse improves, there is absence of albuminuria, diminution in size of the spleen, et cetera. It also prevents streptococcic infection. The effect on the uterus itself is beneficial but slow. In erysipelas it brings about improved conditions after about twenty-four hours.

Duckworth (*British Medical Journal,* May 23, 1903) reports a case of infective endocarditis successfully treated with rectal injections of antistreptococcus serum. We would have to have very strong evidence and more than one case to believe that this method of using the serum had anything to do with the subsequent improvement of the patient.

Smith (*Medical Record,* 1904, April 2, 533) reports six cases of smallpox successfully treated with antistreptococcic serum. He believes that this treatment shortens the duration of the disease, lowers the secondary fever, prevents pitting, lessens liability to pulmonary and renal sequelæ, and causes a more rapid convalescence.

Leudeking (*Saint Louis Courier of Medicine,* 1903) attributes the causes of failure of antistreptococcus serum to:

(1) The polymorphism and variability of the streptococci;

(2) The fact that few septic processes in man are pure, unadulterated streptococcus infections;

(3) The usually tardy and late employment of the remedy;

(4) The inertness of many of the sera on the market.

He reports several cases of the use of this serum with advantage and holds that the early administration of a recent serum in fitting cases of streptococcus infection will prove life-saving. Early intervention in erysipelas and in middle ear suppuration gave good results. In puerperal infection matters are not so simple, but if the streptococcus pyogenes is the agent, early treatment should bear good fruit. In case of abscess of the brain, empyema of the chest, or a purulent exudate in the peritoneal cavity, the serum has no application. Its employment would be irrational, at least until after proper surgical help had been obtained. In the authors experience, injections of serum have no special danger. He has met with urticaria and painful joints, accounted for by the large bulk of injected foreign serum.

Ranney (*Journal of American Medical Association*, 1902, XXXVIII, 1060) reports three cases of puerperal sepsis, in one of which antistreptococcus serum was used with unsatisfactory results. The author believes that the admitted virtue of diphtheria antitoxin has stimulated the overcredulous and enthusiastic to use a variety of sera of more than doubtful utility, if not absolutely harmful.

Chapman (*Medical Record*, Number LXI, 1902, page 100) reports a case of acute articular rheumatism treated with antistreptococcic serum. The patient seemed to be progressing rapidly toward a fatal issue when the serum treatment was begun. Improvement was marked after the first injection, and a normal condition was reached after the third treatment.

Doyen (*Rev. de Therap.*, LXX, 1903, page 117) complains that little attention has been paid to his announcement of the success of the serum he has produced by means of inoculation of animals with the staphylococcus aureus. It has proved more powerful and more constant in its effect than any other serum yet known, in experience with hundreds of cases. At the early stages of a furuncle or abscess a single injection of five cubic centimeters is usually sufficient. The pain and tension cease in two or three hours and the lesion is aborted. In a large carbuncle complicated by diffuse phlegmon the elimination of the necrosed portions proceeds so rapidly under the influence of the serum that in six to eight days nothing remains of the lesion except a small red granulating surface. The serum was applied in a case of severe phlebitis of the opththalmic vein and cavernous sinus with bilateral ophthalmia and delirium. The patient recovered, although the infection had been so severe that the sight of one eye was lost. The improvement was rapid in a case of phlebitis of the cavernous sinus consecutive to a carbuncle on the temple, the patient being already in coma. Sore throats and other lesions due to the staphylococcus yield to the serum with equal promptness, but it has no influence on the streptococcus infections. One of its most promising applications is in simultaneous injection with antitetanic serum in cases of complicated fractures, extensive contusions and soiled wounds.

A number of cases are reported by Sherman (*American Medicine*, October 17, 1903) showing the therapeutic value of antistreptococcic serum. Two were of erysipelas, one of miscarriage, and nine of rheumatism. In all of his rheumatic cases there was a typical clinical history of inflammatory rheumatism, with early evidences of more than usual severity in certain ones. All the patients had good digestion. None developed heart complications, and while the serum treatment was used no other treatmnt was resorted to. The results varied from marked improvement after the first or second dose to complete recovery in a short time. The local effects of the injections were not serious. He thinks that antistreptococcic serum might also benefit muscular, sciatic, and chronic rheumatism. At least a trial would do no harm and might lead to good results.

Menzer (*Münchener Medicin. Wochenschrift,* 1903, 1057) concludes that antistreptococcus serum acts in man as in animals by producing a phagocytosis. When circumscribed collections of pus are present, serum is contraindicated unless such collections are surgically evacuated, for without this the injection of the serum would favor the absorption of the poisonous constituents of the circumscribed pus. The best results are obtained in acute septicemia (streptococcus infection) by using the serum early, in large doses. For medicinal use only those sera should be employed which have been obtained from streptococci recently isolated from human beings.

Ogle (*Lancet,* London, March 14, 1903) draws the following conclusions from his experience with antistreptococcic serum:

(1) That the gravest symptoms combined with streptococcic infection, even of the blood stream, are not incompatible with recovery, if treated by injections of antistreptococcus serum;

(2) That this is true also in malignant endocarditis, but that here the chances are probably less fovorable on account of the colony of micrococci involved in the vegetations in constant contact with the blood stream;

(3) That in malignant endocarditis, staphylococci are frequent, or a mixed infection of staphylococci and streptococci;

(4) That if an examination of the blood be negative it would be prudent to use injections of both antistaphylococcic and antistreptococcic serum.

Mackie (*Lancet,* 1904, Number I, 493) draws the following conclusions concerning the use of antistreptococcic serum in the treatment of scarlet fever and diphtheria;

(1) Antistreptococcic serum is of distinct value in a certain number of cases of scarlet fever, particularly in those where the throat lesion is severe, and toxemia is going on;

(2) Bacteriologic examination will give no sure guide as to the cases in which the serum will be beneficial, therefore it is advisable to give the serum early and to make the bacteriologic examination afterward.

(3) The serum ought to be given early in the disease, just as in diphtheria. The longer the disease has lasted before the serum is used, the less likelihood is there that it will be beneficial. Antistreptococcic

serum is too often brought in with strychnin and oxygen when it is unreasonable to expect it to do good;

(4) If the first dose or two have no effect on the temperature its continuation will probably not be of any value;

(5) The serum is liable to produce urticario-erythematous rashes;

(6) Even in those cases in which it does no good there is no evidence to show that it does harm;

(7) Those cases of diphtheria which present septic symptoms and those wherein tracheotomy may be required may with advantage be treated with antistreptococcic serum as well as with diphtheria antitoxin.

TETANUS.

Toxin.—Little has been attempted in recent years, so far as the chemistry of the tetanus toxin is concerned. Hayashi (*Arch. f. exp. Path. u. Pharm.*, 1901, XLVII, 9) has attempted to separate the toxin from albuminous substances. In this he has succeeded sufficiently to justify him in concluding that it is neither an albumin nor a globulin. He thinks that it must be a primary albumose. He adds the observation that tetanus bacilli will grow in media that are poor in proteids, but not in those wholly devoid of this constituent. It will be remembered in this connection that Brieger and Boer (*Zeit. f. Hyg.*, XXI, H. 2) obtained tetanus toxin which gave no proteid reactions. From its solutions tetanus toxin is precipitated, or partially at least, by most of the metallic salts. However, it is not thrown down by the reagents ordinarily employed in the precipitation of albumin, such as acetic acid and potassium ferrocyanide. Neither is it carried down by calcium phosphate, magnesium carbonate, or aluminum hydroxide. It is precipitated by alcohol and by saturation with ammonium sulphate. The last mentioned reagent is used for the purpose of obtaining the toxin in a concentrated form. Tizzonni prepares his concentrated toxin by twice precipitating with ammonium sulphate, then freeing the toxin from this salt by dialyzing for twenty-four hours against flowing water. The solution of the toxin thus obtained is concentrated in vacuo over sulphuric acid to complete dryness. When this dry preparation is to be used in immunizing animals it may be dissolved in a ten per cent solution of common salt, which will prevent the growth of microorganisms in it, or it may be kept in aqueous solution in the dark, provided it is covered with liquid paraffine or toluol; but it has been found to be safer to add some antiseptic, such as 0.5 per cent of corrosive sublimate or a small amount of malachite green.

Pasquini (*La Rif. Med.*, 1902, Nrs. 22 and 23) has attempted to study the distribution of the tetanus virus in the body according to the following method: Guinea pigs are infected with agar cultures of the bacillus and immediately after death, different organs are removed, rubbed up in a mortar with sterilized sand, submitted to a pressure of four hundred atmospheres, diluted with sodium carbonate solution and treated with alcohol. The precipitate thus obtained is dried as speedily as possible and used for the inoculation of other animals. Extracts obtained by this method from the kidney, liver, lungs, heart, muscles and glands were found to be inactive, while those from the brain and cord produced tetanus in other animals. He did find, however, that when the organs were not removed until one to three days after death the extracts obtained from the kidneys, heart, muscles, and lungs and injected into other animals caused death. The only possible explanation of this seems to be that these organs contain virulent tetanus bacilli which grow in the tissues after death and elaborate their poison.

Morax and Marie (*Annals de l'Institut Pasteur,* 1902, XVI, page 418) have shown that tetanus toxin in the dried state is much more resistant to heat than when in solution, as is the case with enzymes. Dry tetanus toxin when subjected to a temperature of 154° for from fifteen to twenty minutes is markedly reduced in toxicity, but still possesses a certain amount of poisonous action. The same observers found that tetanus spores are much less resistant than the toxin and are completely destroyed when subjected to a temperature of 152° for twenty minutes.

Action of the Toxin.—Some very valuable work has been done on the modus operandi of tetanus toxin. Marie and Morax (*Annals de l'Institut Pasteur,* 1902, XVI, 818, and May, 1903) conclude from their rather exhaustive researches that tetanus toxin is absorbed by the peripheral nerves and that this is due to a special affinity between the toxin and the substance of the axis cylinder. The toxin is attracted to the nerves with great rapidity, but the fixation that occurs is not altogether stable. The toxin moves slowly along the nerves towards the center, and at last reaches the ganglion cell. This movement of the toxin is likened to the absorption of nourishing juices by the roots of a plant. The motor neuron first becomes saturated with the toxin, as is evidenced by the local contraction, or what is known as local tetanus. Wherever the toxin is injected the greater part of it becomes attached to the nerves of the part into which the injection is made. When injected into a muscle the toxin passes into the lymph and then in part into the blood. In the inoculation zone the toxin containing lymph is in contact with the nerve expansions. The motor and vasomotor nerves absorb it, and become saturated with it to a much greater degree than other tissues. The diffusion then takes place centripetally, as has already been pointed out. For some twenty-four hours the local nerve filaments are more saturated than the nerve elements themselves. This saturation first manifests itself in localized tetanus. Meanwhile in other regions the nerve terminations have absorbed a certain quantity of toxin, a sufficient amount to affect their neuron of origin. When this has taken place a general tetanus succeeds the local tetanus. When the toxin is introduced directly into the blood or into viscera, symptoms do not appear until the motor neurons have withdrawn the toxin from the circulating blood. All are saturated to a similar extent and simultaneously. This explains the more delayed onset and the generalization of symptoms in splanchnic tetanus.

Besredka (*Annals de l'Institut Pasteur,* 1903, Number XVII, page 138) claims to have shown that even after the brain substance has been thoroughly saturated with tetanus toxin it may completely recuperate and regain its primary integrity if antitoxin be properly used. It follows from this that the tetanus toxin does not form a stable combination with brain substance, inasmuch as this combination can be broken up by the subsequent use of antitoxin.

Zupnik (*Wiener kliniker Wochenschrift,* 1902, Number 4) states that the spasms of tetanus are of two kinds, first, those due to tonic muscular contraction, and second, those due to spinal reflexes. In clinical tetanus the first symptom is usually contraction of the masseters, while in experimental tetanus due to subcutaneous injection the first symtom is local tetanus radiating from the point of injection. He claims that he has been able experimentally to cause tetanus of the clinical type by injecting the poison subcutaneously in regions free from muscular tissue. He concludes from these differences that the toxin has a chemical affinity for both muscular and nervous tissue. Meyer states that a cat saturated with antitoxin will still react to the tetanus poison injected into the sciatic nerve, and he is of the opinion that the toxin in combination with the nerve is not affected by the antitoxin. To this Zupnik replies with an experiment in which he shows that tetanus produced by the intracerebral injection of the toxin may be relieved and the life of the animal saved by the intravenous injection of the antitoxin. Zupnik is of the opinion that the tetanus poison may travel along the nerve not only centripetally but also peripherally.

It is probable that the chemical reaction between tetanus toxin and the tissues varies in different animals. For instance, the rabbit,—which is not highly susceptible to this poison,—when treated intravenously with the toxin rapidly gives up the injected poison to other tissues, as is shown by the fact that after a short time the poison can no longer be detected in the blood. On the other hand, when the toxin is injected into guinea pigs, whatever be the manner or place of injection, it soon appears largely in the blood. The susceptibility of an animal to this toxin in all probability depends upon the tissue with which the toxin forms a chemical compound. If it unites with nervous tissue, it will prove much more poisonous than if it forms a compound with cells in other tissues.

Marinesco (*Compt. Rend. de la Soc. Biol.,* 1896, Number 24) claims to have found by Nissl's method histological changes in the cells of both the anterior and posterior horns of the cord in animals poisoned with tetanus toxin. Goldscheider (*Fortschr. d. Med.,* 1898, Number 6, also Westfall (*Ibid.,* Number 13) and Pechoutri (*Compt. Rend.,* 1898, Number 23) claim to have found similar changes in the anterior horns both in experimental tetanus and in clinical tetanus in the lower animals and man. According to Marinesco, the chief change found consists in enlargement of Nissl's granules. However, according to other investigators, these cell changes are by no means characteristic of tetanus.

Babes (Supplement Volume "Twentieth Century Practice of Medicine") concludes that antiserum inoculations as they are used today in the treatment of tetanus give unsatisfactory results. He states that inoculations of carbolic acid and brain substance give better results than does the specific treatment. He thinks, however, that a satisfactory specific treatment will yet be found by improving the antiserum and the methods for its use. He refers to Köhler's statistics of ninety-six cases in which no apparent favorable action of the antiserum was observed. This was true even in thirty-one cases in which the serum was employed within two days after the clinical symptoms appeared, the mortality in these cases being 64.45 per cent. Babes himself collected and tabulated one hundred nineteen cases, forty-two of which ended in recovery, but two of these received no antiserum, giving a mortality in cases in which antitoxin was administered of 70 per cent. Behring holds that the mortality has been reduced 15.7 per cent in cases in which at least one hundred antitoxic units have been injected within thirty hours after the appearance of the symptoms. Behring finds that the antitoxin of Tizzoni is without value, while Tizzoni thinks that the better results obtained by Behring may be attributed to the character of the cases. Blumenthal, experimenting upon the subarachnoid treatment in goats, found that experimentally he was not able to save any of the animals even when he injected two thousand times the quantity of antitoxin necessary to neutralize in a test-tube the amount of toxin that had been injected into the goats.

The statement that the tetanus bacillus is confined to the immediate locality of the wound is founded upon Kitasato's work with pure cultures, and certainly is not true in all cases of clinical tetanus. Tizzoni (*Ziegler's Beiträge,* VII, 606) found the bacilli in the spleen, and more recently Zumpe and Oettinger (*Deutsche Archiv f. klin Medicin,* LXIV, 478), also (*Schmidt's Jahrbuch,* CCLVI, 174) have detected the bacillus in the blood. Zumpe placed the heart of a mouse dead with tetanus in bouillon and kept it at 37° for four days, at the expiration of which time the medium was seen to be cloudy and was found to contain, along with other bacteria, tetanus-like organisms. Other mice inoculated with this mixed culture developed tetanus. Hibler has detected tetanus bacilli in the muscles and subcutaneous tissue, and also in the spleen and brain. The bacilli can best be detected by taking large pieces or entire organs and keeping them for some days under anaerobic conditions at 37°. The fact that the bacilli may, and in some cases certainly do, find their way into parts of the body distant from the point of entry, theoretically, at least, renders the treatment of this disease with antitoxin more difficult, inasmuch as the bacilli which have found their way into different parts of the body undoubtedly continue to elaborate a poison. According to Vaillard and Vincent (*Annals de l'Institut Pasteur,* 1891, Number 1) when animals are inoculated with pure cultures the germ dies out wholly after about twenty-four hours, and the animal dies solely from intoxication. Indeed, experiments by a number of investigators have shown that tetanus bacilli, with or without spores, wholly freed from toxin and injected under the skin of animals, are without effect. The influence of certain saprophytic bacteria and of other products in favoring the growth of the tetanus bacillus and the elaboration of a poison in the animal body, is well known. I mention this fact in order to point out the great difference that there is between the experimental and the clinical use of tetanus antitoxin. When in the laboratory we inject a few drops of a pure culture of the tetanus bacillus under the skin of an animal, and subsequently treat it with antitoxin and find that the development of the disease is prevented, we must not conclude that we have exactly the same conditions that we have in clinical tetanus. In the disease thus experimentally induced, we are dealing with an intoxication pure and simple, and we administer the antidote either with or soon after the administration of the poison, while in clinical tetanus we have a mixed culture, we have a germ growing in the tissues, and, in some instances at least, reaching distant organs; and its growth is favored by the presence of other bacteria. Moreover, days elapse between the infection and the administration of the antidote.

The first thing preparatory to securing a good antitoxin is to make an active toxin. The tetanus bacillus grows best and produces its toxin most abundantly in neutral or feebly alkaline bouillon, containing one per cent of pepton and 0.5 per cent of common salt. The addition of glycerin, grape sugar, and other substances frequently added to nutrient media is not beneficial to the growth of the tetanus bacillus, or the elaboration of a toxin by it. In this medium the culture should be grown for six to eight days, under anaerobic conditions, and at the expiration of this time 0.000005 cubic centimeters of it should kill a mouse weighing ten grams. Stronger preparations of it are sometimes obtained. The toxin is a very highly labile body, and for this reason it is best obtained in the dry state for the purpose of preservation. Usually it is precipitated from the bouillon culture after removal of the germs by filtration through porcelain, with ammonium sulphate. This precipitate when dried may be kept for a long time, and 0.0000001 gram of it should suffice to kill a mouse. When this preparation is to be used in the production of antitoxin, a definite amount of it should be dissolved in a 10 per cent solution of common salt. A preparation containing 10 per cent of the precipitate in the salt solution may be used as a stock preparation. It keeps for a long while, and a certain portion of it may be diluted to any desired strength.

In his latest paper on tetanus, Behring (*Beiträge z. exp. Therap.*, 1904, Hefte 7) states that the tetanus toxin is probably an albumose, while the antitoxin is a true proteid. This conclusion is reached largely because a solution of the toxin dialyzes much more readily than one of the antitoxin, thus indicating that the antitoxin molecule is much larger than that of the toxin. Furthermore, Behring has shown that when a solution of a toxin is placed inside the dialyzer and the solution of the antitoxin outside, the toxin passes more rapidly outwards than when dialyzed against water or physiological salt solution, or when dialyzed against other than the antitoxic proteids. This demonstrates that the antitoxin attracts chemically the toxin, and offers an explanation for the observation that the toxin of tetanus travels contripetally in the axis cylinder. The researches of Morax and Marie (*Annals de l'Institut Pasteur,* May, 1903) indicate that the cerebral neuron has but little if any affinity for the tetanus poison, and I believe that all of the most recent investigators come to the conclusion that the ganglion cells have the greatest affinity for this toxin. Behring thinks that the receptors which combine with the tetanus toxin are proteid bodies, and that they differ chemically from proteids found in any other cells, and he hopes by further experimentation to be able to detect these peculiar proteids in the blood, but at present he states that this ganglion cell proteid is lost in the blood just as a small amount of soluble substance would be lost in the ocean. It is true that he has been able to distinguish by coloring reagents between the antitoxic and the nonantitoxic serum, but he is inclined to the opinion at present that these differences are not due to reaction with the antitoxin.

Behring has placed the manufacture of his tetanus antitoxic serum in the hands of a Marburg firm. I suppose that he has done this for the purpose of having it more directly under his supervision. This firm places upon the market the following preparations: (1) A serum containing one hundred antitoxin immunity units. It is claimed that a single injection of this is sufficient to save a man or a horse provided it is made with the appearance of the first symptoms of tetanus. The injection is made subcutaneously in the subclavicular region. (2) A serum which contains twenty immunity units of antitoxin. This is to be used prophylactically, and is also given subcutaneously. (3) A tetanus antitoxin powder, possessing twenty antitoxin immunity units, which is to be used in dressing wounds which might possibly be infected. Behring still holds that when properly prepared antitoxin is used with the appearance of the first symptoms of tetanus, it has marked curative properties. However, in my opinion, the statistical basis for this statement is not altogether convincing.

The standardization of tetanus antitoxic serum is at present altogether unsatisfactory. Behring employs two methods, the direct and the indirect, and all of his serum offered to the market is standardized by the indirect method. This method is complicated,—it appears to me unnecessarily so,—and investigators in this country, even when they have Behring's serum to work with, have always found it to fall below the immunizing power attributed to it. According to Lambert (*New York Medical Journal,* 1897, Volume LXV, 754) the antitoxin unit as reckoned by the Health Department of New York City is the amount of antitoxin necessary to protect one million grams of the test animal, but he fails to state what animal is used, as a test, and Behring has shown that animals differ very markedly in their susceptibility to this toxin. Behring first proposed that the antitoxic unit should be the amount of serum necessary to protect one million grams of white mice when the serum is injected fifteen minutes after the toxin. Later Knorr stated that the antitoxic unit protects from 45,000,000 to 50,000,000 grams of white mice against the toxin. One firm preparing tetanus antitoxin in this country makes the following statement: "Tetanus antitoxic serum is standardized in the following manner: First the amount of tetanus toxin (dried) is determined as the M. L. D. for one gram weight of guinea pig. One hundred times this quantity of toxin is used as a test against the serum. The amount of antitoxin which will exactly neutralize this amount of toxin is designated as the unit." Another firm says: "We are now working on a method for sterilizing our antitetanic serum, using precipitated toxin. The results, however, have not been sufficiently definite to warrant our adopting the method as a routine measure. We hope to overcome the difficulties so as to be able to standardize the antitoxin in this way." It will be seen from this that the method of standardizing tetanus antitoxin serum is still unsatisfactory, and I think that I am not amiss in stating that there is at present no exact method for determining the value of any antitetanic serum.

CONCLUSIONS.

(1) We must know more about streptococcus toxin than we do, and must be able to prepare a soluble streptococcus toxin before an antistreptococcic serum of value can be prepared.

(2) There is no satisfactory proof that any of the antistreptococcic sera now employed by the profession have any therapeutic value. I beg not to be misunderstood upon this point. These preparations are not fraudulent, nor are they made for the purpose of deceiving. On the other hand, they are made with the very best of intent, but no one at the present time possesses sufficient knowledge of streptococcus toxin to be able to prepare an antistreptococcic serum.

(3) There is at present no satisfactory method of standardizing antitetanic serum. When we use these sera we are quite ignorant of the value of the preparation which we are employing. There is, however, no danger apparently of using too much, as it has been shown that antitetanic serum is harmless.

(4) I consider that the prophylactic value of antitetanic serum has been abundantly demonstrated, and I would recommend that prophylactic doses be given whenever the surgeon is called upon to dress a wound which in his opinion might be infected with tetanus bacilli. Indeed, I recommend that a prophylactic injection be given at the time of dressing, and that this be repeated on the third, fifth and seventh days after the receipt of the wound.

WHAT LIGHT DOES OUR RECENT KNOWLEDGE OF TETANUS THROW ON OTHER MUSCLE AND NERVE AFFECTIONS?*

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PROBABLY one of the most far-reaching discoveries in the pathology and physiology of the nervous system is that opened up by the experiment of Doctor S. J. Meltzer, President of the New York Society for Experimental Biology and Medicine. The experiment is simple. By making intravenous injections of methylene blue all of the tissues of the body are, more or less, stained blue; carried everywhere by the blood, sooner or later it reaches all the tissues.

If a curve, say the sciatic, be ligated, after such injection of methylene blue, the nerve is stained in its entire length. If, however, two ligatures be placed upon the nerve, the section of nerve between the ligatures is not stained. Inasmuch as the nerves have a blood supply throughout their entire length, it might naturally be supposed that the nutrient substances from the blood enter the axis cylinders from the side. The experiment seems to prove that the myeline sheath acts as a most efficient insulator—the methylene blue evidently finds access to the axis cylinders solely from either end and from both ends.

Meltzer's experiment seems to show very clearly that methylene blue gets into the axis cylinder only at either end of the cylinder, where it is naked. Other experiments show that chlorid of gold and nitrate of silver will penetrate at Ranvier's nodes and filter up and down the axis cylinder a little ways, and this might be held to show that nutritious material may similarly enter the axis cylinder at the nodes of Ranvier. This may be so, but none the less, Meltzer's experiment demonstrates beyond a possibility of doubt that a substance which is incapable of finding entrance to the axis cylinder by way of Ranvier's nodes is capable of traveling down or up the length of the nerve for its entire distance. Meltzer's experiment certainly suggests a wide field of experimentation in regard to the manner in which various substances may be carried into or through the axis cylinders. While we are accustomed to regard the axis cylinder as a fixed substance, it is clear from this that in reality there is going on in it an incessant flowing by means of which foods or poisons entering at one end of the neuron find their way up or down to the other end.

The practical bearing of this begins to appear at once. Meyer and Ransom, last year, showed that tetanus toxin reached the ganglion cells of the cord solely by passing along the axis cylinder processes. They proved further that the poison of tetanus is thus conveyed from the periphery to the nerve centers by way of the motor nerves only; injected into the sensory nerve roots it does not cause the characteristic muscle spasms. In tetanus the poison may exist in the blood but to reach the nerve centers and act it appears that it must be taken up by the endings of the motor nerves on the muscles and travel back by the axis cylinder route. Hence, the long period of incubation in tetanus. Meyer and Ransom also showed that with tetanus toxin in the circulation a local violence done to the spinal cord as, for instance, by puncture, rapidly produces the characteristic symptoms of tetanus, without the usual incubation period.

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*Read before the ANN ARBOR MEDICAL CLUB, April 9, 1904.

The necessary condition of success in this experiment is that there must be a sufficient disturbance of the structures of the cord to permit the poison to get directly at the neuron or its axis cylinder process whereupon it acts at once. Again this experiment was done: a rabbit was thoroughly immunized by antitoxin, then an injection of tetanus toxin made directly into the nerve. The rabbit died of tetanus promptly as if nonimmune. Clearly the toxin found its way up the axis cylinders, but the antitoxin previously injected and already circulating in the blood had not found access to the ganglion cells at all. These experiments combine to show that with tetanus poison circulating in the blood the mode by which it reaches the neuron bodies in the cord is not by way of the circulation directly but by being taken up by the naked ends of the motor axis cylinders in the muscles and carried by these slowly up the axis cylinders to their centers. This explains the long incubation period of the disease. It also explains the fact that the usual earliest manifestations of tetanus are in the muscles of the face. The shorter the course of the axis cylinders from muscles to their centers in the cord the sooner the poison reaches the cord. Now the axis cylinders of the motor nerves of the face have the shortest course of any. This again agrees with the fact that when the primary infection of tetanus is in the face the incubation period of tetanus is very short.

The practical value of these experiments promises to be very great. There can be no question that we possess an antitoxin for tetanus which thoroughly neutralizes the toxin, yet our treatment of tetanus has been hitherto singularly disappointing. In view of the fact that the poison of tetanus travels so slowly up the motor axone and that once on its way the problem of getting the antitoxin so introduced as to catch up to it, or head it off, is so difficult, the suggestion seems to me important that in all cases in which there is reason to fear the possibility of tetanus, the logical thing to do would be to give antitoxin as soon as possible after the wound was made, and long before any symptoms of tetanus had shown themselves at all. As it is now, the antitoxin is usually given in a despairing way after a long period of incubation has allowed the toxin to get in its work on the elements in the cord itself, and it is too late to use the antitoxin.

We are coming more and more to use diphtheria antitoxin as a prophylactic and it would seem to be quite as reasonable to use the antitoxin immediately after the wound is received which is in any way likely to set up a tetanus. For instance, as long as the manufacture and sale of toy pistols is permitted it would seem a rational method to use antitoxin on every child who is wounded while playing with a toy pistol. In this way it might be possible to neutralize the bulk of the tetanus toxin before it has begun to be absorbed and slowly travel up the axis cylinders. The next therapeutic necessity is to endeavor to inject the antitoxin high enough to get ahead of the toxin. If done early and well into the substance of the main nerve trunk it is conceivable that such use of the antitoxin would be of help. One case is on record of a very successful result brought about by this means. Still much more promising is the method of treatment of tetanus carried out by Sicard, of Paris. He administers the antitoxin by the lumbar subarachnoid route. It is known that the tetanus toxin not only travels up the axis cylinder to the cord but in the cord travels upward, following probably the motor neurons.

In view of the frightful mortality by tetanus, it would seem wise to give the patient the benefit of all these measures and not omit any of them. Use antitoxin by ordinary injection, and freely, to neutralize whatever toxin is in the blood; inject into the main nerve of the affected limb, high up, and also inject subarachnoid, into the cord. Sicard recommends five to ten cubic centimeters of the antitoxin injected around the wound; fifteen to twenty cubic centimeters injected along the peripheral nerves in the wounded limb, and the same amount injected into the subarachnoid space. He advises that the subarachnoid injection be done but once, but that the injection into the main nerve trunks, especially of the infected limb, be repeated in forty-eight hours. In view of the entire harmlessness of the antitoxin it may well prove that the early use and the free use of antitoxin in the manner described may revolutionize our treatment of a disease hitherto regarded as almost hopeless.

These facts constitute a most interesting study in themselves but there seems excellent reason to hope that they will lead to better understanding of the whole field of affections involving muscle and motor neuron.

Let us first consider the phenomena of Landry's paralysis. Nothing seems more certain than that the initial stage of this disease is in the terminals of the motor neurons. The progress of the affection is gradually, steadily from periphery to cord and from the lower end of the cord to the upper. Assuming the flowing of poison from end to end of the axis cylinder, we can in Landry's paralysis clinically watch the slow onward flow of the poison up the axis cylinders. Whatever the poison may be, it so acts upon the axis cylinder as to stop its function as it progresses, yet it does not destroy it nor indeed leave behind a permanent injury. It acts as a temporary motor paralyzer. Reaching the motor cells of the anterior horns it is evidently capable of finding its way up the upper neurons in the cord. The analogy to tetanus is here strikingly complete. Once the tetanus toxin has reached the cord there is clearly a similar extension of the area infected. In Landry's paralysis we evidently have to deal with a poison of no great severity, one having an effect upon the neurons almost exactly opposed to that of tetanus, one which often leaves no trace behind and which would not be usually fatal were the centers in the medulla spared.

Closely allied to Landry's paralysis are certain forms of multiple nuritis, so closely, that some authors consider Landry's paralysis to be a multiple neuritis. In peripheral neuritis there are striking variations in regard to the predominant symptoms of pain on the one hand and paresis on the other. While these are usually spoken of as being found in conjunction in cases of neuritis, yet, as a matter of fact, it is possible to divide cases of neuritis into two great classes—one class characterized by a great predominance of paresis or paralysis, and the other class characterized by intensity of pain or paresthesiæ, and it is a singular fact that many cases in which paresis is profound are accompanied with little or no pain at any stage of the disease, just as there are cases in which the suffering is intense and yet there is no paralysis nor subsequent muscular atrophy. Take, for instance, neuritis of lead poisoning or of diphtheria: pain constitutes an entirely unimportant part of the process.

Now, it has occurred to me, in connection with the facts and experiments which constitute the basis of this paper, that the difference may turn out to be based upon a radical difference in the process which we are pleased to call neuritis. The nerve trunks are not only supplied with blood-vessels but are supplied with sensory nerves, and these sensory nerves run in the connective tissue structure of the nerve, never coming in contact, as far as we know, with the axis cylinders themselves. If we have to deal with a true inflammation of a nerve trunk, one involving the blood-vessels of the nerve and the connective tissue structures, it is not at all difficult to understand why such an affection should be extremely painful. The probability would seem to be that those forms of neuritis accompanied by severe pain and characterized by tender pressure points are due to such an inflammation. On the other hand, those forms of so-called neuritis in which pain is practically absent or unimportant, and paresis the predominant factor, are probably due to an intoxication of the axis cylinder, which follows a course from the periphery toward the center by way of the axis cylinder alone. In such cases it is questionable whether the condition should be called a neuritis or not; whether the process is inflammatory at all. It is probably toxic and not inflammatory. In the painful forms of neuritis there is very little atrophy of the muscles unless the neuritis has been one of unusual persistence, in which case we may imagine that as the result of long continued inflammation in the connective tissue structures of the nerve there finally occurs the destruction of some of the axis cylinders, but in the other forms the tendency to muscular atrophy is much more marked and occurs within a comparatively short time after the onset of the disease; in other words, the poison destroys the axis cylinder rapidly.

There is another very suggestive circumstance in regard to neuritis which follows infectious diseases. The neuritis does not occur while the infectious disease is at its height but after the lapse of a considerable interval. Now, if the toxin of the disease be the cause of the neuritis one would naturally expect the most intense inflammatory reaction while the disease was at its height. When a patient is suffering from a severe diphtheria intoxication the blood is carrying to all parts of the body the injurious elements. Were the intoxication to take place directly from the blood all the susceptible nerve cells would receive the same dose at once, but the long period of delay and the fact that different parts are affected at varying intervals suggests at least that we have to do again with a slow intoxication by way of the axis cylinders, and, as a matter of fact, a diphtheric neuritis occurs at about the same interval after the disease itself as the phenomena of tetanus after the primary inoculation. There is even a further analogy. The muscles of the fauces are usually affected earliest in diphtheria, then the bulbar centers—particularly those controlling the heart—and, at considerably earlier periods the paralysis attacks the arms and legs; the axis cylinders being longer in the latter, it takes a longer time for the poison to travel up the axis clyinders.

Making, then, this classification of multiple neuritis, there are cases of widespread general multiple neuritis involving both motor and sensory fibres whose course very closely resembles that of Landry's paralysis. This holds true not only of the mode of progression from periphery to cord but the progress up the cord is similar. These cases of ascending neuritis differ from Landry's paralysis in the fact of involvement of sensory fibres as well as motor. It is characteristic of the sensory symptoms in these cases that they are not those of great pain or great irritability but of impairment of sensory conduction and in severe cases total loss of sensation.

These cases bring no little anxiety to the attending physician, and often grave blame. A case starts out with numbness and other paresthesiæ in the feet and slowly this travels up the legs. As it progresses a motor weakness develops, not taking in groups of muscles but everything as it reaches higher and higher levels. Finally the cord is reached. Then follows involvement of the sphincters, total paraplegia, decubitus and a myelitis which tends to spread upward. What seemed at first a comparatively simple, although troublesome, affair, ends fatally. What was first diagnosed as a neuritis winds up as a myelitis. In view of facts now known it would seem again that we are dealing with an affection of the neurons which begins at the periphery and extends to the centers, there setting up a myelitis which is sometimes a transverse and sometimes an ascending one.

Let us take another form of multiple neuritis—beriberi. Hamilton Wright, in the current number of *Brain* (winter, 1903), reports upon beriberi in monkeys. The purpose of his article is to establish that beriberi is an acute infectious disease; that the organism exists in close, sunless foci: that it multiplies in the stomach and elaborates a toxin there which, when absorbed, acts on the neurons. He distinguishes between the acute beriberi infection and the residual beriberi paralysis. Speaking of the acute infection—immediate effect of the toxin on the neurons—he says:

"It is still an open question to my mind as to whether the beriberic poison acts centrally on the cells, peripherally on the neuronal terminations, or on the neurons as a whole. But leaving these points aside, *it can be surely stated that only the cells and the terminal portions of their dependent fibres exhibit the action of the toxin in the active stage of the disease.* Later on (beriberic residual paralysis), if the neurons do not repair, but continue to atrophy, the atrophy retrogresses and the main nerve trunks are then found to contain many markedly degenerated fibres."

Now, note that the toxin produced in the stomach and circulating in the blood exerts its first effect upon the parts of the neuron which are not covered by the myelin sheath—and at both ends. The efficiency of the myelin sheath as a means of isolating the axis cylinders from poisons circulating in the capillaries, is again attested.

As to rabies, almost everything which has been said concerning tetanus can be repeated. It has a long period of incubation, but if the wound of infection be on the face the period of incubation is very brief, and the disease, affecting the bulbar centers, is rapidly fatal. Clinical experience has demonstrated the paramount value of subarachnoid injection of its antitoxin, and again the suggestion is certainly clear that were the antitoxin used immediately after the infection occurred there would be much greater prospect of neutralizing the poison. The fact that the parts of the nerve—both motor and sensory—both above and below the ligatures are stained prove that the nourishment enters the axis cylinders from both ends. It follows that if in health the nerve depends upon receiving nutriment from both ends, then an alteration of the normal supply at the muscle end will cause a drain upon the motor cell and hence tend to exhaustion, which might lead to organic changes in the neuron body. This compels us to regard the activity of the muscles with corresponding free circulation of arterial blood and active removal of waste as having a vital relation to the nutrition of the neuron bodies.

It is conceivable that the neuron may suffer in two ways by defective circulation in the muscles: First, by an actual diminution in the supply of nourishment to the outer end of the axis cylinder; and second, by the absorption of toxic materials contained in the muscles. A moment's consideration makes it clear that the muscles of the body are so great in bulk and have such an enormous, active blood supply that in them there occurs the greatest production of waste material in the body. It is the metabolism in the muscles that produces by far the great bulk of waste products. If there be some abnormal production of waste materials or the production of unusual waste materials, or if there be a marked impairment in the elimination of waste materials, then the motor end plates must be bathed in juices capable of becoming toxic.

In this connection I desire, in passing, to allude to that form of neuritis which sometimes occurs in diabetes. From recent experience there seems to be ground for believing that the pancreatic sercetion needs to be associated with some enzyme produced in the other tissues of the body, and that the principal seat of the production of this enzyme is in the muscles. When glycosuria occurs it is prima facie evidence that the pancreatic juice fails to carry on the normal glycolytic process. In view of the probable interdependence of the pancreatic and muscle juices in completing the destruction of the sugar. it is easy to surmise, at least, that the muscles, in diabetes, contain products of metabolism which travels up the axis cylinders and so bring about a neuritis.

There is a therapeutic suggestion in connection with this idea of abnormal substances contained in the muscles. Our osteopathic friends have been blindly working on a right plan. Such massage, manipulation and use of the muscles as conduces to vigorous arterial blood supply to them conduces also to improved nutrition of the entire neuron. When the osteopaths pretend to manipulate the bones of the spine and so influence the spinal cord within they are probably talking rank nonsense, but when they carry out vigorous massage of the muscles they probably do very materially improve the nutrition of the neurons in the cord. Medical history is full of instances in which empirics have accomplished results which later scientific investigation proved to be based upon physiological principles, and we will do well to give our patients the benefit of a close study of empirical results.

Realizing, as I fully do, that these suggestions are only tentative and that I bring them forward only as suggestions which may lead to further investigation, it would seem that experiments on these lines may throw some light on a condition which baffles us all and which, I think, compels every one of us to feel that in some way an understanding must be reached and a cure become possible. I refer to epilepsy. The periodicity of epilepsy is its most striking feature and one most difficult to understand. We know that the nerve elements respond with extraordinary rapidity to gaseous poisons carried to them by the blood. It takes an incredibly short time for chloroform, ether, carbonic acid gas or oxygen to bring about a response in the neuron bodies. A hypodermic injection of morphia, strychnia or cocain produces almost instant response. If the phenomena of epilepsy are due to autointoxication and the poisonous material is supplied to the nerve cells directly by way of the blood and lymph circulation, it would seem as if the response of the cell must be immediate and constant, and yet we are all familiar with that phase of epilepsy by which the motor cells carry on their accustomed functions in a comparatively normal way for days, weeks or months, and even when the fits occur with comparative frequency we seem to be watching a phenomena in which the nerve cell is being slowly prepared for an explosive outbreak. Epileptics will very often say that they know when a fit is coming on by a feeling for a day or two beforehand of unusual well-being. Now, I am aware that the theory is that the molecular constitution of the protoplasm is being gradually changed until it reaches the point of explosion, and it is possible that such molecular changes depend upon a long continued intoxication by way of the blood stream, but it has occurred to me that a possible explanation of the slowly increasing nervous tension may be found in the fact that the poisonous material finds its way to the motor cells not by way of the blood supply but by way of the axis cylinder processes. That there is a very close relation between the pathological conditions in the cell bodies and the activity of the general muscular apparatus is becoming more and more clear. By far the best results in treating epilepsy are being found in the methods of the Craig Colony and others, and the method of the Craig Colony is practically one which ensures abundant vigorous use of the entire muscular apparatus of the body. It is at least suggestive that when patients are set at labor which ensures vigorous circulation through the muscles—a thoroughgoing elimination of the products of muscular waste—that the number of fits begin to diminish in a very striking way in many cases.

A further fact in regard to epilepsy is suggestive, and that is this: Epilepsy occurs frequently enough in men who are accustomed to hard labor, and I think every practitioner who has had to deal with many cases of epilepsy has learned to recognize the fact that excessive muscular exertion is nowadays a not infrequent cause of the epilepsy. In my city practice the most of my epileptics are gross feeders and get far too little exercise, and with them a most important factor in treatment is to secure vigorous and regular muscular exercise. On the face of it these two things seem contradictory but on looking a little closer it is not so. The lazy epileptic fails to wash out of his muscles the effete products, but the epileptic who has worked excessively has formed by the excessive exertion a greatly increased quantity of effete products. In both cases the muscles are bathed in noxious material and it is at least worthy of study whether we may not succeed in helping our epileptics by careful management of the waste products which are formed in the muscular substance of the body.

I have presented some of the lines of clinical and laboratory investigation which most obviously open out from Meltzer's and Mayer and Ransom's discoveries, but there are a continuing series of affections which suggest themselves—the whole field of muscular atrophies and distrophies—and the relation to these of occupation neuroses. There has been a vigorous discussion as to the central or peripheral lesion in pseudohypertrophic muscular atrophy and progressive muscular atrophy. That the lesion may be either cerebral or peripheral, or both together becomes easy to understand in view of these physiological facts.

There is an endless complexity in the causation and mode of onset of these cases and an equal complexity in the pathological finds. There is no telling whether a postmortem will show the most notable lesion in the cord, in the course of nerves, at their terminus or in the muscle alone. If overexertion in a muscle causes, as it well may, the production of toxin, we can understand how the brunt of the poisonous effect may fall on the end plates and the muscle substance itself, in which case we may have mere atrophy with no further lesion of peripheral nerve or cord; or, the poison may act mainly on axis cylinder, or transmitted by it, may set up its worst effect upon the cell bodies. Finally, there are the trophic relations of the skin, the sensory nerves and the cord. There is ample room for the laboratory worker and the clinician to work together and what seems already to be a ground for hope in therapeutical results.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, MARCH, 7, 1904.

THE PRESIDENT, JAMES HAWLEY BURTENSHAW, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

DOCTOR GEORGE B. MCAULIFFE read the paper of the evening, the subject being "Earache." He said that the importance of earache as a pathological symptom has grown *pari passue* with the discovery of the multiform sequelæ of inflammation of the middle ear. Though nature's danger-signal, it has been too often disregarded by reason of its frequent innocuous occurrence and by reason of the ignorance of the patient and the incapacity of the general practitioner along special lines. The lessons gained from the necroscopic examinations of brain abscesses, sinus thrombosis, and the meningitis have illumined the symptomatology of cases formerly treated for disturbed dentition, gastritis, pneumonia, cerebrospinal meningitis and malaria. Many practitioners have acknowledged that in former years cases had been treated by them under one of the above captions which now appeal to them as examples of metastases of aural sepsis.

Earache, a subjective symptom, was discussed as it appears to the general practitioner, who does not differentiate the many pathological processes of which this is the most salient symptom. Earache occurs generally at night. No explanation of this is extant. It is probably explained by the fact that while erect the pharyngeal orifice of the tube is an inch below the tympanic opening. In the recumbent position the tympanic opening is below the pharyngeal, consequently gravitation combined with weakened ciliary action of the tubal mucosa allows infection to enter the tympanum.

Bather's earache comes from the brine which is forced up into the Eustachian tube by swallowing or by clearing the nose after coming out of the water, habits which are universal in bathers. Earache is not caused by water which enters the canal, since the drum is protected by skin which tolerates salt water. An exception to this last statement is found in persons who have a perforation in the drum. The habit of plugging the ear with a cotton protection is fatuous, except in diving.

Earache generally emanates from the nasopharyngeal infection. The importance of keeping down bacterial growth in the nose and throat during infectious diseases was illustrated by statistics. Seven per cent of measle cases in which the nasopharyngeal cavities were attended to developed otitis media; sixteen per cent developed otitis media when no treatment of the nose and throat was instituted.

Adenoids influence earache more by infection from their germ-laden follicles than from pressure. Besides, the adenoid tissue in the tube is sympathetically affected in attacks of adenoiditis, the so-called coryzas of children. Blowing the nose is responsible for many earaches, especially during colds.

The amount of earache is not a guide to the amount of inflammation behind the drum membrane. The pain is felt only when the skin surface of the drumhead, which contains most of the nerves, is pushed out.

General Treatment.—Rest in a semireclining position on the sound ear, with the face turned to the pillow, to favor venous return and drainage to the throat; abstention from alcohol, tobacco and hot drinks. Tincture of aconite in the case of children, one drop every hour, and for adults, aconitia (Duquesnel's), one five-hundredths of a grain every hour until the constitutional effect is felt; no opiates; calomel, one-tenth of a grain, every hour until ten or more doses have been taken. Tincture of pulsatilla, one minim every hour or so, if profuse nasal discharge exists, is useful.

Local Treatment.—The installation of drugs is useless, unless when glycerin causes exosmosis or the pressure of the drops support the bulging drum. Applications of cocain and of adrenalin to the pharyngeal mouth of the tube relieves: dry heat, hot douches, refrigeration by ice-bag or Leiter coil for twenty-four or forty-eight hours, are beneficial, sometimes curative.

The question of incision of the drumhead was discussed from a conservative and from a radical standpoint. The writer was radical in his views because of the lack of proportion between the earache and the causal infection. He was not inclined to believe that it aborts mastoiditis. As many cases of mastoiditis occur now as in the days of conservatism. The incision in the drum should begin below, because the drumhead slopes downward and inward, and because the drumhead is less sensitive below than above. Pressure should not be exerted by the knife, since the pain of cutting results as much from tactile sensibility as from solution of continuity.

Local anesthetics are disappointing. General anesthesia or anesthesia gained from compression of the carodits (Japanese method) are reliable. The after treatment of the incision should be that prescribed by general surgery.

In conclusion, the writer mentioned preventive treatment. Preventive treatment aims to diminish infection in the nose and throat during the course of infectious diseases by sprays of antiseptic oils or by applications; to treat colds in children more rigorously; to remove adenoids and a catarrhal dyscrasia by appropriate local surgery and general medical means; to interdict forcible blowing of the nose, especially during a cold; to keep the head high in children whose ears are likely to be affected; to examine frequently the ears of children who have obscure diseases or who have symptoms unusual to the disease in hand. Aural diseases may exist and the child may not appear to have earache and not know how to express or to localize pain.

Statistics show that acute otitis media is more often thought to be pneumonia than any other condition. They also show that one-third or one-half of the babies with disturbances of the nutrition develop middle-ear inflammation. Therefore the ears should be examined as a routine procedure.

DISCUSSION.

DOCTOR DAVID S. DOUGHERTY: I wish to emphasize the necessity of free and early incision in acute otitis media. I do not advocate making the incision immediately upon the occurrence of pain or of slight reddening of the drum, but in children this might be wise. I have seen several ears affected as a sequel to measles, and in some of them I temporized and on looking at them the next day, found the drum had ruptured itself. I advocate making a wide, sweeping incision, opening the flap freely.

DOCTOR JOSEPH H. ABRAHAM: It has been demonstrated by Geieger and Lannoys that the normal tympanic cavity is free from bacteria. Therefore inflammations of the middle ear following sea bathing must be due to the entrance of the water into the middle ear through the Eustachian tube, carrying with it pathogenic microorganisms from the nasal and nasopharyngeal cavities. I think the nasal douche the direct cause of many attacks of middle ear inflammations. The faulty method by which some persons blow the nose, holding one side and exerting pressure on the other, also accounts for many attacks of otitis. I differ with Doctor McAuliffe only with regard to paracentesis and wish to add a few local applications that have proven very successful in my own work. I classify acute middle ear diseases into acute catarrh and acute inflammation and suppuration of the middle ear. In acute catarrh it is absolutely unnecessary to perform paracentesis in the majority of cases. Of fourteen cases of acute middle ear disease seen by me during the last few months, five were of a suppurative character and the others were entirely catarrhal. In the former paracentesis was performed in every case, thoroughly and radically; in the remaining nine cases paracentesis was performed in only one.

Doctor Francis J. Quinlan: A hot bichlorid douche of solution of mercury will soothe the ear. When incision is made in the drum, a smear should be made at once to see whether any infection is present.

Doctor McAuliffe: While the bichlorid might relieve the pain, it relieves only the outside tissue, and a great deal of inflammation might go on beyond these tissues on which the bichlorid would have no effect whatever.

REPORTS OF CASES.

EPITHELIOMA OF THE ORBITAL CAVITY.

Doctor Walter E. Lambert: Two years ago the eye of this patient became diseased and was removed. Three weeks ago he visited Doctor Lambert's clinic. Abscess filled the entire orbital cavity. It was opened, and a large quantity of pus evacuated. A section was made of a small indurated portion of the lower lid for microscopical examination, and it was reported to be epithelioma. The cavity was carefully explored, but no contents were found. The man had a peculiar voice, and examination revealed an opening in the hard palate which at first seemed to lead to the posterior nares, but later was found to communicate with the antrum. A section was removed from the upper portion of the antrum wall for examination. This is an example of a removal of a growth from the orbital cavity too late to obtain good results. Undoubtedly the abscess has invaded the cells of the antrum. If this should prove to be an epithelioma of the antrum, what could be done for it? I do not think that further surgical interference would have any effect on the growth. *X*-ray treatment might be of some benefit, although the progress which the disease had already made rendered this doubtful. The prognosis in cases of this character is often uncertain. In one instance a patient presented himself two months after operation with induration of all the contents of the orbital cavity and a return of the disease in the lower part of his face. The indurated tissue was removed, the operator cutting as deeply as he dared, and the patient was advised to go home. Three years later he reported that he was in better condition than at the time of the second operation.

STRABISMUS.

Doctor Lambert: I also show three cases of strabismus. The first patient had been operated on nine years ago, and soon afterwards her eyes turned upward. Although there was practically no vision in the affected eye, she desired a second operation. A perfectly straight eye resulted. The second patient is a relative of the first, and her primary operation was performed at the same time. Her eyes also began to turn upward. At present there is also an immense amount of protrusion, and the vision in one eye is very much poorer than in the other. The third patient is a child who has been operated on with very good results. The position of the eye is improved, as is the vision. Thus three different results ensued from one operation. In the majority of these cases a very high degree of narrow refraction produces a poorer vision in one eye than in the other. The vision, however, sooner or later becomes normal.

STRICTURE OF THE RECTUM.

Doctor Jerome M. Lynch: I wish to show a specimen of stricture of the rectum, in which all the anatomical relations are preserved, showing bladder, uterus and other appendages, and in which can be produced the tactile sensation of the stricture. It also shows the cicatrix of an ulcer which existed when I first saw the patient. The ulcer rapidly healed under enemas of peroxide of hydrogen and boric acid and local application of fifty per cent. argyrol. The patient is about thirty years of age, married, and gives a negative family history. She discloses a personal history of several abortions during the past ten years, peritonitis following the last one, about four years ago. She has suffered a gradually increasing and persistent constipation from infancy, relieved only by cathartics. Three years ago she was operated on for stricture, a posterior proctotomy evidently having been performed. Dilatation was not continued after the operation, however, and the stricture returned and the constipation was as severe as before. She also suffers from pain in the rectum and sacral region, exceeding nervousness, frequent urination, flatulency after eating, a discharge of muco-pus and blood with the stool, and has to strain considerably. When she first consulted me, about two months ago, she was consuming large quantities of alcohol under the impression that it relieved her nervousness. She took about a pint a day, and the result was a chronic gastritis, with the usual morning vomiting which was relieved by lavage. The allowance of alcohol is limited to three ounces a day. She gives a negative history of syphilis, and there are no evidences that she has ever had this disease. An examination of the rectum, which was exceedingly painful, showed an annular stricture some two inches above the anus. At this point the lumen of the gut was considerably diminished, not large enough to admit the tip of a small index finger; below the stricture was an ulcer about the size of a dime. An examination through the vagina above the stricture was so painful as to lead to the belief that ulceration existed above the stricture as well. Palliative treatment is useless, unless continued for the remainder of the patient's life, and the only hope of relief is in a radical operation. A resection has been decided upon, and the patient will be prepared for the operation by the administration of an enema of peroxide of hydrogen and boric acid twice daily for two weeks. The ulcer has been healed by the application of argyrol. Patient commenced taking alcohol secretly in large quantities a few days before the date set for the operation, and one day suddenly expired in uremic convulsions.

RADIOGRAPH OF INCOMPLETE COLLE'S FRACTURE.

Doctor Joseph A. Robertson: I wish to show a radiograph of what is referred to by Doctor Roberts as a "rare, incomplete, reverse Colle's fracture." In addition, the radiograph shows a break, which had knitted, of the styloid process of the radius and a fracture of one of the carpal bones.

PERFORATING GASTRIC ULCER.

Doctor John A. Bodine: The patient, while out shopping and in apparently good health, was seized with sudden violent pain in the abdomen and fell to the floor in a faint. She was removed to her hotel in a cab. The speaker saw her in consultation four hours later. She had returned from abroad the day before, and had always prided herself on her perfect health and energy. Inquiry as to her digestive functions brought out the fact that she had not been able to drink coffee the past few years, and that occasionally a little gas was formed in the stomach, which was relieved by a pinch of soda. There had never been any pain, vomiting or other symptoms traceable to this organ. Her pulse was 110 and temperature 99° Fahrenheit. Her entire abdomen was rigid and sensitive to the touch; liver dulness present; tongue extremely dry, brown-coated, cracked; a typical picture of facies abdominalis presented. Rupture of either the appendix, gall-bladder or stomach was the tentative diagnosis, and immediate exploration was advised. As there had been no history of appendicitis, and as it seemed impossible for the appendix to rupture suddenly without some warning, this diagnosis was lightly considered. There had been no previous history implicating the gall-bladder, and, as in the case of the appendix, sudden, violent rupture was thought to be impossible without previous incriminating symptoms. The presence of an extremely dry, septic tongue, together with the absence of any previous symptoms, seemed to point to a perforating gastric ulcer. A compromise incision was made along the right linea semilunaris so as to cover the three organs under suspicion. Some turbid fluid escaped from the peritoneal cavity. The appendix was brought into the incision and found to be healthy. The pelvis was explored with reference to ectopic rupture, and the pelvic organs were found to be absolutely healthy. The incision was enlarged upward and the gall-bladder found to be healthy. The pyloric end of the stomach was then drawn into the wound, and on the anterior surface, near the pylorus, a clean-cut perforating ulcer, the size of the end of a lead-pencil, was found. Some gastric juice was escaping, the stomach being empty at the time of perforation. An induration, possibly an inch in diameter, surrounded the opening. On account of the condition of shock present, fancy surgery was not attempted, and the perforation was treated much as one in typhoid fever. The ulcer was inverted and buried beneath a suture. A convenient omental graft was lightly stitched over the suture-line. The wound in the abdominal wall was closed, the gauze being brought out at the upper angle. The stomach was washed out with salt solution, to remove any contents present as well as to prevent any after vomiting. Every two hours the patient was turned on her right side for a few moments and then again allowed to turn on her back. This was done to empty through the pylorus any mucus and gastric juice that might accumulate in the stomach. Morphin was also used in the after treatment as a physiological splint. Nutrition has been sustained with enemas and thirst by rectal saline injections. Twelve days have elapsed since the operation, the patient has been taking food by mouth about two days, and she is about well.

DEGENERATION OF THE CARTILAGINOUS STRUCTUPE OF THE EAR.

DOCTOR GEORGE B. McAULIFFE: The patient received a slight traumatism which is entirely out of proportion to the changes that have taken place. Particular attention is called to the shape of the tip of the ear. The usual outline of the curves have been entirely lost. These cases are often found in insane asylums and in institutions of a similar nature, and some authorities question whether a nervous lesion is not in some way connected with the condition. In the present case injections of iodin, carbolic acid and other remedies have been tried, without result. The affection is often met with in chronic epileptics.

DISCUSSION.

DOCTOR DENNIS J. McDONALD: A similar condition is common among the Flathead Indians, and among others on the frontier, and in men who have been nipped by the frost. The point of the ear in these cases is marked as typically as in the insane.

EXOSTOSES OF THE AURAL CANAL.

DOCTOR McAULIFFE: I also wish to show some specimens of exostoses which have been removed from the canal of a patient's ear. They were grasped by a simple tenaculum, and, aided by the patient's involuntary jerk in the opposite direction, were removed by this instrument. The exostoses show a small neck by which they have been fastened to the wall of the canal, which neck was not visible while those tumors were in position.

DISCUSSION.

DOCTOR JOSEPH H. ABRAHAM: Doctor McAuliffe is fortunate in having cases in which the tenaculum could be employed so readily. I have seen several cases of exostosis or hyperostosis, and, in the majority, operative interference was contraindicated, as the patients never complained of a single symptom that could be traced to the presence of these tumors. The greater number of these growths are attached to the root and posterior wall of the external auditory canal, and in a few cases they are very close to the tympanic membrane; so near, in fact, that the operation described by Doctor McAuliffe is apt to prove far more serious than the presence of the tumors themselves, on account of the injury that is liable to occur to the tympanic membrane. I have seen cases of exostosis in the canal in which a probe was passed with difficulty. How a tenaculum of sufficient size and strength to remove them could be passed around these tumors is beyond my comprehension. In cases in which there is an otitis media and in which the larger growths interfere with normal hearing, some operation is indicated and should be performed. A radical operation for removal, under general anesthesia, with the chisel, trephine or other suitable instrument is the one indicated. I do not consider the tenaculum the proper instrument in such cases.

Doctor Dennis J. McDonald: The method employed by Doctor McAuliffe is endorsed by Barr, of London, and by many other well-known authorities. They do not advocate the removal of every exostosis, but in the majority of cases, when it is possible to pass the tenaculum, they favor this procedure.

Doctor Francis J. Quinlan: These growths often exist, and the attending physician and even the patient are unconscious of the fact on account of the absence of symptoms. In such cases I do not counsel their removal. I agree with Doctor McAuliffe that it is much wiser to remove them with the tenaculum than to open the canal and run risks of possible infection. Practically all of his patients with this condition of the canal had been more or less frequent sea bathers, and he was inclined to think this was a factor in its development. Also, most of his patients had been men affected with uric acid diathesis.

Doctor McAuliffe: I recall one instance in which a patient was to be operated on for exostosis by opening the canal, and when the ether was administered the patient developed an epileptic attack. He was sent to me to see if some relief could not be obtained without an operation, and the tenaculum was employed successfully.

ANN ARBOR MEDICAL CLUB.

STATED MEETING, APRIL 9, 1904.

The President, CYRENUS GARRITT DARLING, M. D., in the Chair.
Reported by JOHN WILLIAM KEATING, M. D., Secretary.

DISCUSSION OF PAPERS.

Doctor David Inglis, of Detroit, read a paper entitled "What Light Does Our Recent Knowledge of Tetanus Throw on Other Muscle and Nerve Affections?" (See page 210.)

Doctor Herdman: This is so very thoughtful and suggestive a paper that it will hardly be possible for anyone to take up its various points in detail. We have, as you all know, a great many of what at present seem to be incurable diseases of the nervous system. They certainly are incurable when they come to our clinics, because they have passed on to the stages of degeneration and we have simply the debris. This is a hopeless state. We find it in locomotor ataxia, lateral sclerosis, and spastic paralysis. We find it in a great many diseases affecting the gray matter of the cord. These are hopeless at the time they reach the hospital, and every practitioner wants to be able to reach the disease at the proper time. I know the state of feeling that Doctor Inglis has been in when dealing with these cases—constantly groping to reach these diseases at an earlier stage. There are suggestions in this paper which I think are destined to bear fruits.

Tetanus is due to a bacterial toxin. There may be a period of incubation of from five to fifteen days. It may be idiopathic or traumatic, but we know more about the traumatic form. The bacteria elaborate the poisons at the site of the wound; the blood carries the toxins to all parts of the body, and the derangement of the nervous system is brought about in this way. We have assumed hitherto that it has reached the nervous system through the blood channels. This suggests another method which corresponds more readily with the time involved. But I must say that on brief thought the suggestion that the process is one of fermentation is one that is more probable; that is, that it is one of circulation through the axis cylinder, what we formerly spoke of as catalysis, a modification by a chemical or metabolic change. In this way a chain of action, a process of fermentation, is set up in the nerve structure at the periphery, which gradually passing up the axis cylinder by a process of fermentation, thus gradually sets up that change in the nerve fiber itself.

This fermentation process seems to my mind a little more reasonable. That such a change does take place in the entire neuron, we know from staining and microscopical study. And this conception of it is quite as applicable to other forms of nerve paralysis, which have been set up in diphtheria and Landry's paralysis. Now, in diphtheric paralysis there is a period of incubation after the membranes have been formed. The first nerves to be affected are those to the pharynx, those supplying the pharyngeal muscles and the velum palati; and these are attacked rather early. Next in order, perhaps, are most frequently the pneumogastric and the phrenic nerves. Ordinarily this takes about fifteen days; and then it requires about three weeks for the manifestations to occur in the limbs. When the attack is a mild one there is paralysis of the larger nerve trunks.

The idea that has been expressed with reference to the continuance and constancy of the autotetanic toxin would seem suggested in the case of diphtheria. As to the use of antitoxin, this has not been persisted in long enough to have the system saturated with the antitoxins, and thus check the progress of the fermentation process, as I shall call it. A longer use of the treatment seems indicated; and we may be able to prevent those paralyses by pursuing that course, namely, by the hypodermic injection of the antidiphtheric toxins for a much longer time. Some sudden deaths have resulted from the involvement of the pneumogastric, and the longer treatment might have been especially valuable in these cases.

Landry's paralysis is a disease regarded as almost universally fatal. It begins in the larger nerve trunks, travels up the cord, and produces its effect by involving more especially the gray matter in connection with the motor matter of the cord. It travels up as an infection from one of the lower masses of nerve cells to the next above, in that extremely regular succession from below upward, as a fluid would hardly make its progress. If this conception of the progress of that disease is true, and if we can eventually get a counteracting toxin, and if we could get injections of this into the cord, it gives us a hope of getting something to counteract this almost hopeless disorder.

In tabes the sensory neurons are involved; and from the ganglia, the disease progresses downward to the periphery and forms a neuritis often simulating multiple neuritis. Sometimes it is almost impossible to distinguish it from multiple neuritis. This may also explain the manner of progress of this toxin, though we do not know the origin. If in those now rather hopeless disorders we can discover something counteracting to inject into one or two segments of the cord, it gives us a great deal of hope that we may check them in this way.

The paper, as it regards epilepsy, is suggestive, but it would take too long to enter into all the details.

DOCTOR LOMBARD: Doctor Inglis' paper is exceedingly suggestive. The work of Doctor Meltzer is certainly very important and must be thoroughly substantiated. If the nerve of a frog is placed in a little receptacle of cocain, paralysis of the tissue will result to the degree of losing its conductivity and its irritability. I did quite a bit of work on the subject at one time. The fact is that substances can penetrate the sheath to the nerve. If cocain can be absorbed through the sheath, one wonders why the methylene blue did not go through. If it is a question of a flow from a nerve end along the axis cylinder toward the nerve cell, one would expect that different substances would travel at the same rate. In Doctor Meltzer's expermient the methylene blue, if it entered by the nerve end, must have passed up the nerve quite rapidly. Unless it is a question of the foci of disease constantly producing toxic substances, and a gradual infection, it seems to me that the flow up the nerve could hardly account for the time observed in the cases mentioned by Doctor Inglis.

In order to reach the motor nerve ends, the substance must be absorbed from the blood through the sheath of the muscle into the muscle substance. We all know that many drugs are able to pass from the blood to the nerve cells and paralyze them. It does not seem that there is any reason why substances reaching the blood through a wound should not reach the cells of the cord as soon as the muscles. In both cases it goes through the blood. It seems as if the nerve-cell body would be affected as soon as the nerve-end.

Although the nerve-end is a part of the cell, it is differentiated so as to be chemically different. Every part of the cytoplasm is different from every other part. The protoplasm of the end-plate is different from that of the nerve-cell body. Curare shows this difference by acting on the nerve-end. It is perfectly possible to think of certain substances which act injuriously as having their first effect on the nerve-end organ; and although acted on at the same time, because of the difference in composition the cell body is not affected until later and perhaps secondarily.

Doctor Vaughan: This is one of the most suggestive papers I have heard in a long while. It opens up a vast field of thought. I would suggest that the doctor will find the same illustration in rabies that he has brought forward so admirably in connection with tetanus. There is scarcely any doubt that the virus in rabies travels up the axis cylinder. The suggestion that we use tetanus antitoxin in any fourth of July accident and in all others where there is a probability of tetanus infection as a prophylactic remedy, is one which I heartily commend. In all such cases a large dose of tetanus antitoxin should be given when the wound is first dressed, and this should be repeated on the third, fifth and seventh days. There are four methods of injection: subcutaneous, intravenous, intracerebral and subarachnoid. For prophylactic treatment, the subcutaneous method is sufficient. After the symptoms have developed, the subarachnoid seems to be the best method, or at least to yield the best results. It seems to have been well proven that tetanus antitoxin may be used in large amount without injury to patients. The suggestion made by Doctor Inglis concerning Landry's paralysis is of exceeding interest. It is the first time I ever heard it, but it seems so rational that it must be true, and first, we must find out what the toxin is in this disease, and secondly, we must discover an antitoxin, and thirdly, know how to use it. In multiple neuritis the condition seems to me to be somewhat different because in this disease, or rather in this class of diseases, histological changes in the nerve tissue are much more marked. At first we supposed that the germ of tetanus remained at the site of the wound, but recently it has been found in the nerve centers, and evidently the virus of this disease accumulates in the cord. The paralysis of diphtheria is possibly due to the intracellular poison, or possibly to the toxoid.

Doctor Inglis: In regard to rabies, the analogy between this disease and tetanus is marvellously close. As an illustration, if the tetanus infection takes place in the face, the subsequent symptoms are developed within a very short time, whereas, if the infection is in the foot or hand, there is a delay of two or three weeks. That rule holds with regard to rabies. Evidently they both follow the same rule and the theory simply is that the line of march from the head to the upper centers of the head is much the shorter. It is evident that various substances get into the axis cylinders in various ways. There are certain salts which can reach the axis cylinders through the nodes of Ranvier. The salts of gold and silver do this. The validity of Meltzer's experiment is this: that when two ligatures are tied about a nerve the methylene blue does not get in between. It gets in on both ends, however. He demonstrated the fact that there was a flow in the axis cylinder. As regards time we know that nervous elements react differently to different drugs. With chloroform, morphin, et cetera, we expect a prompt result. We do not expect such a prompt result from phosphorus or arsenic. We do not get the acute effect of phosphorus or arsenic in this way.

EDITORIAL COMMENT.

DUPING THE DOCTOR.

THE gullibility of the doctor is proverbial! Unbounded confidence in human nature renders members of the medical guild easy prey to the deceptive schemes of unprincipled promoters. Almost every mail is augmented by alluring propositions of investment companies, while illustrated descriptions of mining camps, that promise rich returns on further development, are regular reminders that the golden nuggets are within easy reach. In addition to the fair promises of this contingent the doctor is likewise besieged by the announcements of amateur manufacturing pharmacists who elect the noxious patent medicine method of heralding new therapeutic agents by circular instead of invoking attention through the medium of a reputable medical press. These firms expect to convince the doctor of the never-failing qualities of some worthless product by a promissory tale that would require modification to pass ethical muster, and, to the disgrace of medical science, admission must be registered that the story is often effective.

* * *

Especially is the circular a winner if reinforced by a complimentary notice in the doctor's medical journal, inserted as forerunner to a prospective advertisement of the preparation. An extended harangue is sometimes published, and in this event may assume the form of an "original article," especially designed for advertising purposes by some unsophisticated or unscrupulous practitioner. It occasionally happens that a thoroughgoing business manager is able to command one or two hundred dollars for publishing a paper of this pseudoscientific sort, and if a few such deals can be effected during the year a nominal subscription price is easily maintained. Thus the doctor who is willing to pay a fair price for everything except medical pabulum, becomes identified with this grade of medical literature, unconscious that the journalist is receiving two prices for the advertising dispensed in the text—one from the physician and another from the purveyor. The periodical being intended, practically for gratuitous distribution, only enough genuine scientific matter is published to insure the semblance of medical journal and afford plausible excuse for the subscription charge and the privilege of the mails.

* * *

An instance illustrative of the fact that doctors are easy marks has recently been observed in the nature of reference to a couple of lay magazines which have been lauded to the sky by several medical contemporaries because of announcement by the managements that patent medicine advertisements are excluded, in one instance the information being imparted in a circular letter to members of the profession, one of which found its way to this sanctum. So many communications are received, in which the sender narrates some scheme calculated to benefit the doctor or advance the cause of medical science, that little faith is reposed in the empty mutterings, and this one was consigned to the wastebasket after a casual reading. The circular was more successful in producing fruitful results in some quarters, however, for when ensuing exchanges began to appear the discovery was made that the advertising sought by the instigators was accorded editorial prominence of the most pronounced type, the attention of the medical profession being directed to the moral stand taken by the lay publishers, a certain editor even announcing that he had just remitted the subscription price to one of the journals and requesting each of his subscribers to do likewise. A second editor states that the other journal excludes "medical" advertisements entirely. "No wholesale attempts to lure the public into the ways of quackery; no appeals to dose with doubtful 'restoratives,' or 'nervines,' or any of the methods of transforming well people into valetudinarians or drug fiends; no 'snide' cures for these unfortunates; no pandering to sensualists or abortionists." The article concludes with the expression that "practical missionary work of this kind should be 'boosted' vigorously."

* * *

Notwithstanding the encomiums that have been lavished upon these lay journals the fact remains that they contain some decidedly objectionable advertising. As regards "restoratives," one publication proclaims the virtues of four designed for the hair. One, that bears the name of a well-known manufacturer, will "bring back the freshness of youth to your gray hair;" while another, "a specially prepared treatment, that will stop falling hair, cure diseases of the scalp, and grow hair on bald heads," is offered to those who send a "lock of hair" for diagnostic purposes. An optician advertises that he is the originator of "fitting glasses by mail" and the inventor of a method whereby you can "examine your eyes without an oculist." A notorious Massachusetts patent medicine promoter announces a "toothache powder" and a "medicated soap;" while an unique article in the form of "toothache gum" is guaranteed to "stop toothache instantly, whether there is a cavity or not; prevent further decay and further aching, and also cure corns, bunions and warts." A "foot-ease powder, that cures ingrowing toe nails and takes the sting out of corns and bunions—a certain cure for sweating, callous and hot, tired, aching feet," would seem to mark the dawn of the millennium for the foot-sore pedestrian. A well-recommended "nervine" beverage is prepared in the form of an "extract" that purports to be "a nutrient tonic, not a stimulant, a food that makes flesh and blood, bringing roses to the cheek and plumpness to the wasted form, while soothing the fretted nerves like a mother's kiss. Both publications are wilfully guilty of illustrating advertisements with photo-engravings of seminude female configurations which, although probably designed merely to attract the general reader, seem fairly well calculated to excite striplings invested with especially susceptible passion.

The foregoing records some of the nostrums and nudities advertised in publications which the doctor is urged to support. Members of the profession are so often importuned to countenance some questionable enterprise calculated to demoralize the practice of medicine or depreciate the standard of morality, that little surprise would be occasioned by any kind of proposition from the laity. But, when arbiters of the medical press essay to endorse certain standards it behooves them to know something about what they are talking about. The rank and file of the profession will do well to pursue an even tenor of way, ever remembering that the sphere of labor in behalf of health contemplates the domain of moral, mental, physical and social hygiene.

CONTEMPORARY.

WILLIAM ERNEST HENLEY—POET AND PATIENT.

[The following appreciation of Henley, contributed by Doctor J. G. Adami to the *Montreal Medical Journal*, is too good to cut, so we print it entire. It would be of interest to know how many American bookstores could furnish Henley's volume out of hand. The editor found the book at the first place visited.]

THERE is a little green-backed "Book of Verses," by W. E. Henley, which should be—but somehow is not—known and treasured by every medical man who finds occasional solace in literature, for the booklet, published in 1888, opens with some thirty short pieces grouped together under the title "In Hospital," and these portray in language so vivid and intimate, so singularly apt, the episodes of hospital life from the point of view of the patient, that their appeal to us is immediate. They are surely unique. Another and greater poet, Paul Verlaine, in "Mes Hôpitaux," has given us vignettes of a like order but then in prose: there is nothing that approaches Henley's impressions penned from the sick bed in the old Edinburgh Infirmary, that Hospital—

> . . . grey, quiet, old,
> Where Life and Death like friendly chafferers meet,

in which for eighteen months or more he lay, a patient in Lister's wards.

Why the verses are not better known has been a mystery to me ever since they came to occupy a place on my shelves. I have often thought to bring them to the notice of those who read these pages but desisted, doubting whether an article on such a subject might not come as a "bolt from the blue." Henley's death—a week ago—(on July 11th) seemed to afford the right occasion—and forthwith I found that medical men were not alone in their lack of knowledge of Henley and his work. In a great northern English centre, wealthy, very prosperous, a university city, to boot, I spent hours visiting the chief shops for books, both first and second-hand, and never a copy of the "Book of Verses" could I obtain. At one large and long established departmental store, I was gravely informed at the poetry counter, that they did not know any writer of that name, and certainly had never been asked for his works; at another book shop, the first in the city, Henley was known, it is true, and I was offered his last volume—but neither the "Book of Verses" nor his collected poems were obtainable. They did not keep him because he did not sell; he was a disappointment and more than one of his works had proved a drug and had to be sacrificed at any price. And this on the very day when every reputable paper in Great Britain from *The Times* downwards devoted two to three columns to an obituary and critique of our author, acknowledging him freely to be one of the masters of the late Victorian era. Verily the poet has fallen upon evil days. His lute is played more subtly, his themes and melodies are more varied than ever, but the children of the market place are heedless of his song. But in this case the song seems worth heeding.

It was in 1874 that Henley entered the wards of the old Royal Infirmary at Edinburgh. He was then at twenty-five, after having graduated with distinction at Saint Andrews, a struggling writer of verses and contributor to the "Cornhill," under the editorship of Leslie Stephen. There for close upon two years—a weary time for a man of active mind and Bohemian habits—he remained under treatment by Lister for what I gather must have been tuberculous arthritis, a period so long that the hospital and hospitalism sunk into his being. His impressions written on the sick bed were only published some twelve years later, and then in a little book of "Voluntaires," edited by Mr. H. B. Donkin, for the benefit of a hospital in the East End of London. Later they were incorporated in the "Book of Verses" published that same year.

To make the work known I shall quote freely.

Here first is Henley's entrance to the hospital he was to know so well:—

A small, strange child—so aged yet so young—
Her little arm besplinted and beslung,
Precedes me gravely to the waiting room.
I limp behind, my confidence all gone.

The grey-haired soldier porter waves me on,
A tragic meanness seems so to environ
And so on I crawl, and still my spirits fall:
These corridors and stairs of stone and iron
Cold, naked, clean—half workhouse and half jail.

So to the surgical out-patient room for examination:—

Here, on a bench a skeleton would writhe from . .
Angry and sore I wait to be admitted;
Wait till my heart is lead upon my stomach,
While at their ease two dressers do their chores.

One has a probe—it feels to me a crowbar—
A small boy sniffs and shudders after blue-stone,
A poor old tramp explains his poor old ulcers.
Life is (I think) a blunder and a shame.

He is admitted and lies first in the main surgical ward, with its "gaunt brown walls" looking "infinite."

The atmosphere
Suggests the trail of a ghostly druggist,
Dressings and lint on the long, lean table.
Whom are they for?
The patients yawn
Or lie as in training for shroud and coffin;
A nurse in the corridor scolds and wrangles.
It's grim and strange.

. . . .

Oh, a gruesome world!

The limb has to be operated upon and we have the sonnet—"Before."

Behold me waiting—waiting for the knife.
A little while, and at a leap I storm
The thick, sweet mystery of chloroform,
The drunken dark, the little death-in-life,
The gods are good to me: I have no wife,
No innocent child to think of as I near
The fateful minute: nothing all too dear
Unmans me for my bout of passive strife.
Yet am I tremulous and a trifle sick,
And, face to face with chance, I shrink a little.
My hopes are strong, my will is something weak . .

So to the operating table:—

Then they bid you close your eyelids,
And they mask you with a napkin,
And the anaesthetic reaches
Hot and subtle through your being.

And you gasp and reel and shudder
In a rushing, swaying rapture,
While the voices at your elbow
Fade—receding—fainter—fainter,

. . . .

And you wrestle, blind and dizzy,
In an agony of effort

Till a sudden lull accepts you,
And you sound an utter darkness . .
And awaken . . . . with a struggle . .
On a hushed, attentive audience.

And later:—

. . . . Then my senses fleet:
All were a blank, save for this dull new pain
That grinds my leg and foot: and brokenly
Time and the place glimpse on to me again;
And unsurprised, out of uncertainty,
I wake—relapsing—somewhat faint and fain
To an immense, complacent dreamery.

Then comes the period of healing; the days can be endured but the long and weary nights are "hideous, asleep or awake."

Shoulders and loins
Ache . . . . . !
Ache, and the mattress
Runs into boulders and hummucks,
Glows like a kiln, while the bedclothes
Tumble importunate, daft—

Ramble and roll, and the gas
Screwed to its lowermost,
An inevitable atom of light,
Haunts, and a stertorous sleeper
Snores me to hate and despair.
All the old time
Surges malignant before me;

* * * * *

Far in the stillness a cat
Languishes loudly. A cinder
Falls, and the shadows
Lurch to the leap of the flame. The next man to m
Turns with a moan; and the snorer,
The drug like a rope at his throat,
Gasps, gurgles, snorts himself free, as the night nurse,
Noiseless and strange,
Her bull's eye half lanterned in apron,
(Whispering me, "Are ye no sleepin' yet?")
Passes, list-slippered and peering,
Round . . . and is gone.

Then we have the picture of Lister on his rounds and the old familiar ward classes—as seen by the patient:—

Hist? . . .
Through the corridor's echoes,
Louder and nearer
Comes a great shuffling of feet,
Quick, every one of you,
Straight your quilts, and be decent!
Here's the Professor.

In he comes first
With the bright look we know,
From the broad white brows the kind eyes
Soothing yet nerving you. Here at his elbow
White-capped, white-aproned, the Nurse,
Towel on arm and her inkstand
Fretful with quills.
Here in the ruck, anyhow,
Surging along,
Louts, duffers, exquisites, students, and prigs,
Whiskers and foreheads, scarf pins and spectacles,
Hustles the Class! And they ring themselves
Round the first bed, where the Chief
(His dressers and clerks at attention),
Bends in inspection already
. . . . . shoulders .

. . . . . serry and shove;
While from within a voice
Gravely and weightily fluent
Sounds; and then ceases; and suddenly
(Look at the stress of the shoulders!)
Out of a quiver of silence
Over the hiss of the spray,
Comes a low cry, and the sound
Of breath quick intaken through teeth
Clenched in resolve. And the master
Breaks from the crowd, and goes,
Wiping his hands,
To the next bed. . . . . . .

I would like to quote in full the series of pictures which ensue of hospital characters: the casualty patient; the weak witted ploughman; the suicide—the staff nurse, old style, with her "antique liveliness and ponderous grace" and "thick Scot wit that fells you like a mace"; the staff nurse, new style, "blue eyed and bright of face but waning fast into the sere of virginal decay" who talks Beethoven, disapproves of Balzac, speaks Latin with the right accentuation and gives at need "draught, counsel, diagnosis, exhortation; the scrubber—each picture touched in so surely that the character stands clear and incisive as in an antique cameo. There are two, however—or three—that I cannot desist from quoting. The one is that of "The Chief"—a noble tribute to, or, rather, a nobly worded delineation of the greatest of surgeons.

His brow spreads large and placid, and his eye
Is deep and bright, with steady looks that still.
Soft lines of tranquil thought his face fulfill—
His face at once benign and proud and shy.

If envy scout, if ignorance deny
His faultless patience, his unyielding will,
Beautiful gentleness and splendid skill,
Innumerable gratitudes reply.
His wise, rare smile is sweet with certainties,
And seems in all his patients to compel
Such love and faith as failure cannot quell.
We hold him for another Hercules
Battling with custom, prejudice, disease,
As once the sons of Zeus with Death and Hell.

This it must be remembered was written when the fight was still raging hot and strong, when Lister and his methods were still on trial. Had ever poet worthier subject to describe, or surgeon finer tribute to his excellence!

Then there is the House Surgeon:—

Frank-faced, frank-eyed, frank-hearted; always bright
And always punctual—morning, noon and night;
Bland as a Jesuit, sober as a hymn;
Humorous and yet without a touch of whim;
Gentle and amiable, yet full of fight.

Two days ago I was lunching with Mr. Watson Cheyne who incidentally remarked that Henley was in hospital while he was House Surgeon to Lister. Is this I wonder the young Watson Cheyne? It might be.

Last there is the "Visitor," a character sketch which in its perfectness rivals that of the great "Chief."

. . . . . her soft white hair adorns
Her withered brows in quaint straight curls, like horns;
And all about her clings an old sweet smell,
Prim is her gown and quaker-like her shawl,

* * * * * * * * *

A wee old maid that sweeps the Bridegroom's way,
Strong in a cheerful trust that never fails.

I purposely forbear to give the whole of this exquisite sonnet; something must be left for others to find and enjoy for themselves. If this original edition is not obtainable let each buy for himself the "Poems—A Book of Verses: London Voluntaries," of which since 1898 it would seem there have been several small editions.

At a later period through the influence and care of friends the poet was transferred from the public to a private or semi-private ward. Leslie Stephen interested others in him, among them Robertson Smith and Robert Louis Stevenson. We obtain a glimpse in Stevenson's letters of the beginning of a memorable intimacy which ended bitterly. Stevenson writes to Mrs. Sitwell in January, 1875:—

"Yesterday Leslie Stephen, who was down here to lecture, called on me and took me up to see a poor fellow, a poet who writes for him (in the *Cornhill Magazine*), and has been eighteen months in our infirmary, and may be, for all I know, eighteen months more. It was very sad to see him there in a little room with two beds, and a couple of sick children in the other bed. A girl came in to visit the children, and played dominoes on the counterpane with them; the gas flared and crackled; the fire burned in a dull, economical way; Stephen and I sat on a couple of chairs and the poor fellow sat up in bed with his hair and beard all tangled and talked cheerfully as if he had been in a King's palace or the great King's palace of the blue air."

Thus the acquaintance began which influenced the lives and work of both men, which led to the writing of plays together, of four prose dramas:—"Deacon Brodie," "Beau Austin," "Admiral Guinea," "Robert Macaire." The first of these was played in London, and, oddly enough, in Montreal (1887). I do not know that it has since been staged. But, returning to the private ward described by Stevenson, it is interesting to have Henley's own impression of the place:—

Here in this dim, dull, double-bedded room
I play the father to a brace of boys
Ailing, but apt for every sort of noise.

* * * * * * * * * *

They eat, and laugh and sing and fight all day;
At night they sleep like dormice. See them play
At operations:—Roden, the Professor,
Saws, lectures, takes the artery up and ties;
Willie, self-chloroformed, with half shut eyes
Holding the limb and moaning—Case and Dresser.

As the needy poet gained in health and strength Stevenson took him for long drives. In the lines entitled "Pastoral," we have his appreciation of the first of these: the delight of leaving behind the bare walls and seeing the good green land in all the freshness of Spring.

O, the brilliance of blossoming orchards;
O, the savour and thrill of the woods
When their leafage is stirred
By the flight of the Angel of Rain![*]

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[*] Stevenson writes of this first drive: "The whole country is mad with green. To see the cherry blossom bitten out upon the black firs and the black firs bitten out upon the blue sky, was a sight to set before a king. You may imagine what it was to a man who has been eighteen months in an hospital ward. The look of his face was as wine to me."

The series of verses throw light upon the friendship between Henley and Stevenson and upon its quality—on the part, at least, of our poet.

In the Envoy, to Charles Baxter he writes:—

Do you remember
That afternoon—that Sunday afternoon!
When, as the kirks were ringing in,
And the grey city teemed
With Sabbath feelings and aspects,
Lewis—our *Lewis* then,
Now the whole world's—and you
. . . . came
Laden with *Balzacs*

. . . . . .
To that transformed back-kitchen where I lay

. . . . . .
Dear *Charles* since then
We have been friends, Lewis and you and I
(How good it sounds, "Lewis and you and I.")

* * * * * * * *

But he who could write thus of his friendship, comparing the three of them to the immortal *Musketeers* did not hesitate to print at the same time the following lines under the heading "Apparition," clearly referring to Stevenson's first visit to the "transformed back kitchen":—

Thin-legged, thin-chested, slight unspeakably,
Neat-footed and weak-fingered; in his face—
Lean, large-boned, curved of beak, and touched with race,
Bold-lipped, rich-tinted, mutable as the sea
The brown eyes radiant with vivacity—
There shines a brilliant and romantic grace,
A spirit intense and rare with trace on trace
Of passion and impudence and energy.
Valiant in velvet, light in ragged luck,
Most vain, most generous, sternly critical
Buffoon and poet, lover and sensualist;
A deal of Ariel, just a streak of Puck,
Much Antony, of Hamlet most of all,
And something of the shorter Catechist.

No true friend could have written those lines and seen them printed. On the part of Henley I do not hesitate to say that it was amusement, interest, community of ideas and of purpose in life that made the intimacy worthy of being preserved by him; loyal friendship never existed. I am by no means a whole-souled admirer of Stevenson; to me the above appreciation of him seems curiously just, but I do protest that Henley was incapable of knowing what friendship meant if he could write thus.

And the denouement bears me out. Later he writes:—

. . . . .
And so it ends
With friends.
Friends . . . old friends . . .
And what if it ends?
Shall we dare to shirk
What we live to learn,
It has done its work,
It has served its turn;

* * * * * * * * * * *

They had drifted apart—and the drifting it is generally admitted, was on the part of Henley. There were, it may be, "some private excuses for resentment," but to the outsider it seemed that, more particularly, Henley was irritated at the vogue Stevenson had gained, whereas he himself had failed to gain more than a "success d'estime" for his more serious writings; and so it ended after Stevenson's death in Henley's appalling and unforgivable attack on his old friend in the criticism contributed by him in 1901 to the *Pall Mall Magazine* upon Mr. Graham Balfour's "Life of Stevenson." I speak, it may seem with some heat, but I do so with the memory that one now dead, who was a true friend to me, experienced a like treatment from our poet; he had visited him when in hospital in Edinburgh, and had cared for him; himself a man of vast knowledge and wide sympathies he had appreciated Henley's evident talent and had gained work and opportunities for him; and the poet turned and rent him.

But, it may be asked, are we to ascribe this to Henley's natural character or to his infirmity? It is a difficult question to decide. Though of large frame and burly he was left by the disease which took him to the infirmary a permanent cripple and something of a permanent invalid. A jealousy and bitterness, an aptitude to hit viciously below the belt if I may so express it, or indulge in surreptitious kicks, is curiously frequent in those who are crippled, in those who realizing their importance, and imagining their capacity if only they were as others—see those others winning in the race. There is indeed a historic parallel in the case of Pope. Were we in their place could we restrain ourselves from doing likewise? All that I would say is that under the conditions it was a mockery for Henley to extol his friendship for Stevenson or for any other man; it was intimacy, not friendship proper.

With two exceptions, modestly included under the title of "Echoes" —I refer to the ballad "O gather me the rose,"* and the lines beginning, "Out of the night that covers me," both it may be noted written when he was in the wards, Henley wrote nothing finer than this "Hospital" series. In the rush of active life he wrote poems, it is true, but they do not appeal. Upon that later life I shall not dwell—upon his fame as editor of the *Scots Observer*, which became later the *National Observer*, on the subsequent editorship of the *New Review* and so on—nor, interesting though it is, shall I discuss the pioneer part played by him in awaking the spirit of Imperialism throughout England and her colonies and the stimulus he afforded to Kipling and other younger writers. I shall have, I hope, done my duty if I lead others to read and appreciate those verses, the only verses of their kind, in which he so vividly paints the life and the impressions of a patient in the wards of the old Edinburgh Infirmary when Lister was there as sureon.†

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*This, it is true, is an echo of Herrick, but it is more exquisite than its original.

†For data bearing upon Henley's intimacy with Stevenson, I am more particularly indebted to an unsigned article in the literary department of the *Times* of July 17th.

MEDICAL NEWS.

THE DEMISE OF DOCTOR BARTHOLOW.

Doctor Roberts Bartholow, of Philadelphia, emeritus professor of materia medica, general therapeutics and hygiene in Jefferson Medical College, died at his home in that city May 10, aged seventy-three years. The doctor graduated in medicine from the University of Maryland in 1852, and subsequently received the degree of LL.D. from Saint Mary's College of the same state. Throughout the Civil War he served as medical officer in the regular army, but resigned his commission in 1864 to accept the professorship of practice of medicine and clinical medicine in the Ohio Medical College at Cincinnati, and become dean of the institution. In 1879 he resigned his position in this school to accept a professorship in Jefferson Medical College. He was not only a teacher but an author as well, and achieved fame mainly through successive editions of two great text-books, one on "Practice," and the other on "Therapeutics," over sixty thousand copies of the latter having been sold. He was identified with a large number of learned societies, and wrote many valuable papers, one of which—"Notes on Some Uses of the Oil of Erigeron"—having been contributed to the April (1887) number of this journal. In 1880 he delivered the Cartwright Lectures in New York on the subject of "Antagonism between Medicines and between Remedies and Diseases." Doctor Paul Bartholow, a son, is already achieving prominence in the profession.

A MEDICAL MEETING AT ANN ARBOR.

The annual meeting of the Washtenaw County (Ann Arbor) Medical Society was convened in the New Medical Building of the University of Michigan, Wednesday, May 24, 1904. Four sessions comprised the meeting. A business session was held at 11 o'clock; a social session occupied the noon hour, and consisted of a reception and dinner at the Cook House; a clinical session was held in the University Hospital during the afternoon, a medical clinic being conducted by Doctor Frank Billings, of Chicago, from 2 to 3 o'clock, and a gynecological clinic by Doctor Reuben Peterson from 3 to 4 o'clock; a discussional session was held in the west amphitheatre of the New Medical Building at 8 o'clock in the evening, when Doctor Billings read a paper entitled "The Changes in the Spinal Cord in Pernicious Anemia," with lantern slide exhibit of sections of the cord. The following officers were elected for the ensuing year: President, Doctor George Dock; vicepresident, Doctor William Blair; secretary-treasurer, Doctor John William Keating. The Washtenaw County Medical Society now has nearly one hundred members, and the territory within its jurisdiction is the most thoroughly organized, as regards the medical profession, of any county in Michigan. Medical organization in Washtenaw county had its inception in 1827, and according to medical history Ann Arbor is entitled to the credit of being the birthplace of the first county medical society in the state.

MINOR INTELLIGENCE.

THE Cincinnati Obstetrical Society was organized twenty-seven years ago, with ten charter members, four of whom are still living.

DOCTOR JAY F. SCHAMBERG, of Philadelphia, is authority for the statement that six hundred sixty-five persons died from smallpox in that city between 1901 and 1903.

PROFESSOR NIELS FINSEN has been awarded the Cameron prize, bestowed by Edinburgh University, for the most important work in practical therapeutics during recent years.

MEXICO is determined to prevent the recurrence of yellow fever within its borders, and has decided to spend $7,000,000 during the present year in safeguarding against the scourge.

THE College of Physicians of Philadelphia is contemplating the erection of a new home, the cost of which will approximate about a quarter million dollars. The sale of the old building and grounds will almost net this sum.

A GERMAN Surgical Congress will be held in Berlin in the spring of 1905. A Rontgen-ray Congress will be held in connection, to celebrate the tenth anniversary of the discovery of the *x*-ray, at which there will be an exhibition of *x*-ray apparatus.

AFTER a legal contest of several years in an endeavor to retain the ownership of the Medical College Laboratory of New York City, which Cornell College has controlled during the period of litigation, the University of New York has finally lost the suit, the Court of Appeals at Albany having sustained the lower courts by decreeing that the laboratory be reconveyed to the city.

JOHNS HOPKINS HOSPITAL has been enriched $500,000 by a recent donation from John D. Rockefeller. The gift has no conditions attached. The amount will compensate in a measure for the loss incurred by this institution during the late fire. The announcement of the gift was made on April 4, and $1,600, which represents the interest to the date of final presentation, has been added to the original amount.

BELLEVUE HOSPITAL, of New York City, is planning to be the largest hospital in the world. Its new building will cover a plot of ground extending from Twenty-sixth to Twenty-ninth streets and from First avenue to the East River. A decade will be required to complete the building, the estimated cost of which is about twelve million dollars. Accommodations will be afforded for 2,500 patients, who will receive ministration from 125 physicians and over 300 nurses.

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ORIGINAL ARTICLES.

MEMOIRS.

THE PRESENT CAMPAIGN AGAINST INSANITY.*

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IT requires no genius to discover that we have, in dealing with mental disease, a much more complex problem to solve than presents itself to us in any form of disease having its seat outside the realm of the mental faculties.

Whatever view we adopt regarding the relationship of mind and body we are forced by our experience to the conclusion that they each have a field of operation in a large part independent the one from the other both in health and in disease. And yet there are times when the correlation of mind and body is so close that the relationship of their activities appears to be that of cause and effect, and when a disease is such as to bring about disorder in both these realms of our being the morbid phenomena, both clinical and pathological, take on a complexity and intricacy that is bewildering in the extreme.

If a disease is confined to the physical organism alone we are beginning to entertain some assurance that with our modern methods of research, both clinical and experimental, we can eventually hunt it down and compel it to deliver up the secrets of its nature, its origin and the conditions of its development and maintenance.

This assurance is grounded on the knowledge we possess of the structure and function of our bodily organs in health, and the means we have at hand for accurately determining to what extent and in what manner they have been caused to depart from the normal under the influences which the disease in question furnishes.

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*Read before the AMERICAN MEDICAL ASSOCIATION, June, 1904.

If the anatomy and physiology of the mind were as equally well known to us as are those of the body the problems presented to us in the form of mental disorders would be much simplified though they would remain even then infinitely more difficult of solution than those which involve the bodily organs only.

But we can scarcely be said as yet to have a perfected science of normal psychology. The field of the mental faculties has not been surveyed and mapped. Its topography is as yet comparatively unknown. How then is it possible for morbid phenomena which have in this territory their source to receive a correct interpretation?

It has required the united effort of a large number of investigators, pursuing independent lines of research, to place the science and art of medicine and surgery in the advanced position which it holds today. Many of these have done their work with no thought or recognition, at the time, of the service they were rendering to humanity in revealing the nature of disease and the manner of its control through the discoveries they were making. The chemist, the physicist, the biologist have each attacked their separate problems and zealously sought their solution only to discover incidentally how much they had aided the physician to solve the difficulties with which he was contending in his efforts to discover the cause and cure of certain diseases.

It has required the focusing of light from many sources to reveal to us what we now know of typhoid and yellow fever, of diphtheria and malaria and a host of other diseases, and in our masterful efforts at their control we have freely used the knowledge furnished us by the chemist, the physicist, the entomologist and many other workers whose immediate concern is with the problems of pure science. Neither Lenard, Crookes, nor Roentgen could have had any conception of the aid they were rendering to medicine and surgery in studying the effects produced by electric discharges sent surging through the rarefied gases in a partial vacuum, and yet their discoveries and those which have followed have gone far toward revolutionizing both the diagnosis and treatment of many hitherto intractable diseases.

The strongholds of bodily disease have been stormed on every side in recent years. Clinical, pathological, chemical, physical, bacteriological and pharmaceutical forces have all been pressing forward to the attack and each has its victories to record. It is by reason of the cooperation of these several lines of research that such rapid and efficient progress has been made in medicine and surgery during the past three or four decades. All things have worked together for good.

The success which has attended this plan of campaign has naturally suggested its adoption in dealing with diseases of the mind. Now for more than a century the fact has been recognized that disease of the body is in many instances the occasion of disease of the mind. It was the demonstration of this fact and the thorough inculcation of this idea in the consciousness of humanity that enabled Pinel and Tuke, Daquin and Chiaruggi, in the latter part of the eighteenth century, to start the movement which has gradually ameliorated the condition of the insane.

As a result of this discovery it has slowly but surely come about that in every civilized country humane treatment of those so afflicted has replaced the brutality, persecution and neglect which were formerly their portion, and hospital care has been substituted for the pillory, the scourge and the dungeon.

The more the progress that has been made in the better understanding and control of diseases of the body the greater has been the opportunity to benefit those who, by reason of bodily disease, have become mentally afflicted.

It is now well understood both by the lay and medical mind that the condition of the body must receive careful inspection as a preliminary to a right interpretation of mental states, whatever other factors there may be that enter into the problems.

The attempt is being made, therefore, in every enlightened community to study the problem of insanity in the light of the revelations of modern medical science; to equip those hospitals which have for their special duty the care and treatment of mental disorders with all the facilities for clinical investigation covering the entire range of bodily disorders in order that no derangement within the material organism may escape discovery, whether it may or may not have either an immediate or remote influence upon the mental disorder.

To meet this demand in a practical way each community has been forced by the conditions that pertain to it to work out its own method.

In many instances the hospitals for the insane, where they are favorably located, as in or near to large cities, have availed themselves of the services of well qualified specialists in other branches than that of psychiatry proper. They have also, in not a few cases, created clinical laboratories for the more thorough study of their patients and placed them in charge of well trained pathologists and physiological chemists.

The large additional expense which this plan requires is prohibitive in all but a few favored cases. A plan which has been much more generally adopted is the establishment of a special ward for the accommodation of cases of mental disease in connection with a general hospital. Here the clinician, in every specialty, the pathologist, the chemist and the bacteriologist with their laboratory facilities for the investigation of the blood, secretions and excreta, are already provided, and the careful study of the bodily conditions of those afflicted with mental disease is thus greatly improved and simplified at the least possible cost. A provision such as this makes it possible also for the patient afflicted with insanity to receive that prompt attention of the right sort which may in some instances prevent what may be but a temporary condition of mental derangement from becoming a permanent one. The general hospital is usually located in the most populous districts. Access to it is convenient and there is not likely to arise the objections or delays in getting the patient admitted that so frequently intrude themselves when the suggestion of commitment to an asylum for the insane is made. Thus both the patient is benefited and his friends and relatives are relieved of grave responsibilities, for it is oftentimes in the earliest stages of mental disorder that a patient is most dangerous to himself or others.

While the advantages of a psychopathic ward in connection with a general hospital is apparent to all, yet there are certain vexing questions which may grow out of this arrangement which do not appear at first glance. A large proportion of cases of insanity are incurable. For these a ward in a general hospital would not prove a fit asylum. They must needs be transferred to quarters more suitable for their permanent care, which for the majority of cases would probably be one of the public asylums of the state. But the authorities in charge of these asylums would naturally protest against becoming the dumping ground for incurables and object to a method which affords the members of their medical staff no opportunity for studying the early stages of the disease of those who are committed to their charge. The harmonious adjustment of the relation between the independent general hospital which undertakes to treat the insane in the early stages of their mental aberration but which can make no provision for them should they prove chronic and incurable, and those institutions which are well fitted for this latter duty will no doubt eventually be brought about, but it will require time and does not for the present afford the most favorable conditions for a systematic study or treatment of patients thus afflicted.

Still another plan for meeting this advanced movement in the study of insanity has had its origin among those who, as medical officers in charge of hospitals for the insane, have more than any others long recognized the need for better facilities with which to attack the intricate problems constantly before them. Since it has been impossible for many of these institutions to avail themselves individually of the new methods of clinical investigation and research, especially in that complete and efficient form which they know would alone be adequate to meet this requirement, a solution of the difficulty has been met in some places by concert of action on the part of the public asylums situated within the boundaries of the same county or state whereby *a central laboratory* has been created to serve the needs of all. This plan has much to recommend it. The central laboratory can be, and in several instances is, located where the services of experts in every branch of medicine and surgery are available and where other laboratories engaged in correlated lines of research are near at hand to contribute both material and moral aid to the work. Thus duplication of facilities are avoided and economy gained without any loss in the efficiency of service. The problems presented to the psychiatrist for solution are much the same in all asylums for the insane and especially in those public asylums located in the same state or district and in which the conditions giving rise to insanity are similar. It is therefore quite feasible for the medical staffs of the several hospitals so related to submit these problems for study and investigation to a central laboratory or psychiatric clinic provided the arrangement is such that they all can readily avail themselves of its facilities and share equally in the instruction which it affords. Where several asylums are under the management and control of a lunacy commission as in the State of New York or a State Board of Charities as in some other states, the details for uniting the several hospitals for the insane in a central laboratory plan with which to meet the requirements of modern clinical research can be readily worked out.

The New York plan with its central laboratory at Manhattan Asylum on Ward's Island under the charge of that most efficient and practical of modern psychiatrists, Doctor Adolph Meyer, will serve as an incentive and a model to any who are interested in advancing this movement in other localities.

The Scottish Asylums have recently instituted a similar plan to that in operation in New York. The movement began in that country in 1896 as a voluntary one under the able leadership of Doctor T. S. Clouston, the energetic and far-seeing superintendent of the Royal Edinburgh Asylum. A central laboratory was created in 1897 and put in charge of an enthusiastic and capable pathologist, Doctor W. Ford Robertson. It is maintained by the voluntary contributions from those asylums that have approved of the plan. Under the management of the director this laboratory has demonstrated the need for its existence and has won to its support even the doubters, so that at present practically all of the twenty-three Scottish asylums have joined the organization for maintaining it and share in the benefit it affords. Quite recently new and commodious quarters have been provided for this laboratory on the grounds of the Royal Edinburgh Asylum where the clinical material, which is indispensable for the proper methods of study and research, is ready at hand and abundant.

It is claimed by Doctor Robertson that a central laboratory created to serve the needs of the associated asylums should undertake to perform three distinct functions: (1) To be a center for research in the pathology of insantiy. (2) To be a place at which expert opinion can be obtained by the staff of any of the asylums. (3) To be a school for the training of asylum physicians. To these ought to be added, in my judgment, a fourth, namely, the instruction of the medical profession in general in the clinical aspects of insantiy especially in its incipient stages. The best interests of the mentally diseased as well as of the public at large will not be served until the causes that lead to insanity and the symptoms which indicate the presence and operation of these causes become so familiar to the general practitioner that he will be prepared to recognize and to counteract them. For it is only through his influence that preventive measures will be more clearly conceived and effectually put into practice. If our purpose is to check the causes of disease at their fountain head then the one who is being trained for the active medical work of the future, the medical student who is soon to take his place in the fighting line, must have such equipment as will best fit him to wage a successful warfare, and this as regards insanity has been woefully neglected.

The Michigan plan for meeting all the requirements for adapting the modern methods of clinical research to the study of insanity is an unusually comprehensive one owing to the peculiar advantages which a state university affords.

The medical department at the University of Michigan has its laboratories of chemistry, bacteriology, histology, anatomy and pathology already well equipped. It has a commodious general hospital. It has its clinical specialists in every branch of medicine and surgery as well as in other departments of learning, scientific, technical, scholastic and economic.

All of these facilities are so closely associated that a mutual helpfulness is the consequence.

In connection with the general hospital, which is a state institution, supported by the state, and established mainly to afford clinical instruction to the students in medicine, a psychopathic ward has been recently added and arranged for the reception of forty cases of mental disease.

The statute which created this psychopathic ward provides for a close affiliation between it and the five State Hospitals for the Insane located within the state. The superintendents of these hospitals are consultants on the staff of the University hospital. They are special lecturers also upon psychiatry at the University. Provision is made whereby patients can be transferred from any one of the state asylums to the psychopathic ward of the University hospital at any time for special examination and study. A commodious clinical laboratory is provided for the psychopathic ward. It is to be equipped with all the modern appliances for treatment, including the Baruch method of hydrotherapy. It is designed that the director of the psychopathic ward—a man well trained in clinical psychiatry—shall act in the capacity also of pathologist for the several state asylums. It is intended that he shall give instruction to the members of the asylum staffs both at their several institutions and at the University hospital. The laboratory of the psychopathic ward will thus be the central laboratory for the asylums of the state, each of which will have, in addition, its special laboratory for clinical diagnosis. At the central laboratory members of the staff of the asylums will be received and furnished with opportunity to engage in special lines of research.

It will be clearly seen how readily the conditions here adapt themselves to the modern requirements of a successful campaign against insanity in the most effective and at the same time most economical way.

The interchange of patients between the University hospital and the state asylum in the interests both of the patient and of science is readily effected.

Every means is at hand for a complete investigation and study of the patient's bodily and mental state. Every opportunity is afforded for thorough instruction to the members of the staff of the several state asylums in all that pertains to clinical psychiatry and pathology. And last, but by no means least, the students in medicine will be well trained in clinical psychiatry as a regular part of their curriculum.

What is thus planned for Michigan, is quite as possible to realize in every state of this Union in which a state university is in successful operation, supporting a medical department supplied with a full clinical staff and modern equipment.

It will be seen from these many indications that the entire civilized world is awakening to the necessity for a vigorous campaign against the causes which lead to mental disease. Its various manifestations of psychical abnormality and their associated bodily state are being subjected to critical examination and study by the best methods at our command in every European country; in several of the South American republics; sporadically throughout the United States and even in Japan.

The plan of campaign is variously conceived. Everywhere it is beginning to be recognized that the study must be a clinical one, the patient in his entirety must be under observation,—the insane man must be brought into conjunction with the means for investigating his condition from every point of view—the *anatomical,* the *pathological,* the *chemical* and the *psychological.* Each of these lines of approach has led to some good results; some of them more fruitful than others, partly because of the pathway chosen, but chiefly as a result of the clearness with which the particular problem selected for solution has been grasped and the skill, persistency and vigor employed in the attack.

The anatomical foundation for these studies has received valuable accessions from a host of workers and although there is still some difference of opinion as to the structure through which the ultimate neural element communicates with its fellows, neural cytology has kept well in advance, so that no delay has resulted from the shortcomings of those who have chosen this department of the field of research. Nor can any one country or any individual worker claim credit for the bulk of the service rendered to the cause of mental alienation by discoveries in the anatomy of the nervous system, so generally have biologists, anatomists, physiologists and pathologists, everywhere, furnished contributions that make up the total of our present knowledge of this subject.

In the department of pathological anatomy the activity has been greater than the results, and the early expectations of what could be accomplished along this line have not been realized. When the postmortem findings are divorced from, or are unaccompanied by, a careful record and analysis of the clinical symptoms they are often of little importance. Yet some studies of value have taken place in this department of research, among which it would be proper to mention that in arteriosclerotic dementia by Alzheimer, those of Nissl in general paralysis and syphilis, those of Bevan Lewis on changes in the cortex in epilepsy, and of Mott in dementia praecox. Of great value also is much that has been contributed by Dejerine and others in investigations of cases of organic dementia associated with gross lesions such as tumors, traumatisms, hemorrhages and emboli, and in this connection we must not overlook the valuable contributions of Spiller.

Studies of the pathological anatomy underlying the various manifestations of aphasia have also been very fruitful in the interpretation of many of the symptoms characteristic of the insane mind and in this field Wernicke has done some of his best work.

The field of experimental pathology, by reason of the exactness by which the conditions influencing neural cytologic changes can be controlled, has in it possibilities of much promise for aiding the science of psychiatry and has already to some extent been employed.

The researches of the French and Italians have mainly been directed along chemical and psychological lines. They have proposed for themselves questions on autotoxemia which by reason of the complexity of the factors involved have not, in many instances, been answered in a satisfactory manner as yet. Nor have the chemical studies in any locality thus far yielded any but meagre results because of the difficulties that lie on the chemical side. "The problems have not been clear since the chemical questions involved are too complicated." "The most important contribution in Europe so far made to science from this source is that of Halliburton, who has demonstrated cholin in the cerebrospinal fluid of general paralytics and other degenerative processes" (Hoch).

Those who have ventured to attack the problem of insanity by way of the strictly mental side have, likewise, found their course bestrewn with many formidable obstacles.

The intangibleness and bewildering perplexities of the phenomena here presented baffle the observer unless he chance to be endowed with an intrepid and adventurous spirit and possesses a special capacity and fitness for this kind of exploration.

All excursions into the disordered mental territory, by observation and study confined to the morbid psychic phenomena, have partaken so far, for the most part, of the nature of a reconnaissance.

It has not been for lack of workers in this field nor for lack of ability on the part of those who have chosen it but rather because the territory is too vast when approached from this direction and the phenomena too complex.

Perhaps more has been accomplished than we are yet prepared to realize by those who have carefully observed the phenomena of morbid psychology and who have carefully left on record the results of their observations. Certainly exact knowledge of the nature of various forms of insanity has increased to a wonderful degree during the last century and it is to the clinical observation and attempts at comparison and classification on the part of our leading alienists that this is due.

If, then, the results have been meagre this must be attributed rather to the great extent and roughness of the territory to be explored and the sparsity of the equipment furnished them for penetrating it than to any lack of energy or enthusiasm upon their part.

Nevertheless, it must be said that the pathway which is offered for an interpretation of morbid mental states by a comparison of them with the action of the normal mind is the most direct, the most attractive, line of approach. The borderland disorders such as hysteria, hypnosis, the various forms of duplex or multiple personality, the phobias, and the imperative ideas are a most interesting and attractive region. Moreover, these phenomena lend themselves more readily to the requirements of experimental research and serve as a means of gradual but sure approach to the more fixed and intricate forms of mental alienation which the several forms of insanity present.

The success which has recently attended the efforts of the many able workers in the field of pure clinical and experimental psychology, not only in correctly interpreting the evolutions of many forms of morbid mental states but in their ability to remove them by a system of psychotherapy has fully demonstrated the necessity for giving to this line of research our earnest attention and hearty support. The work of such men as Ziehen, .Haidenhein, Forel, Bernheim, Pierre Janet, Milne Bramwell, Sidis and White cannot be belittled or ignored. It must be taken account of and given a place in any movement against insanity that aims to be comprehensive in its scope.

It goes without the saying that the best generalship is that which grasps the situation fully and in its entirety and then, marshalling all the available forces places them in positions where they will be most effective and afford mutual support.

I think it must be admitted, by those who are competent to express an opinion upon the subject, that if any one man deserves the appellation of commander-in-chief in the present campaign against insanity the title belongs to Kraepelin of Heidelberg. Kraepelin bases his classification of insanity, and consequently his study, upon all the facts available, namely, the symptom picture, the etiology, the course of the disease, the outcome and the ultimate pathological changes; in fact upon whatever we can find.

In none of these sets of data do we yet really know what is essential and what is nonessential. But a comparison of the results of our study of all the phenomena taken from every source will eventually reveal the salient factors. This is the foundation of Kraepelin's method and the great importance of his teaching as compared with others lies in the fact that he has emphasized the importance of the course and outcome of cases of insanity and has thus paved the way for the establishment of a prognosis based, not only on vague impressions as has often been the case, but on definite data, and he has done this by comparing carefully the course and outcome of his cases with a minute analysis of the symptom picture (Hoch). Nevertheless Kraepelin must be looked upon not as one apart from the host of workers but rather as a conspicuous exponent of the method which is being very generally adopted for dealing with the problem of insanity in every enlightened community.

All who in recent years have in any professional capacity taken an active part in dealing with mental disease must have discerned that it is upon this field that the science and art of medicine is destined to work out its highest achievements.

Here is the theatre of humanity's noblest activities—the stage on which the physical and the material forces join hands with the intellectual and the spiritual to enter upon those higher reaches of human attainment.

To the medical profession is assigned the important task of pointing out the way by which this complex and intricate machinery—this interplay of body, mind and spirit may go on in perfect harmony without friction, or useless waste of energy, to realize the ultimate possibilities and purposes of their union.

REPORT OF A CASE OF CELLULITIS INVOLVING THE ARM AND FOREARM.*

By DEAN LOREE, M. D, ANN ARBOR, MICHIGAN.
FIRST ASSISTANT IN SURGERY IN THE UNIVERSITY OF MICHIGAN.

THE patient was admitted to the University Hospital March 6, 1904. Two weeks previous, while splitting wood, he ran a sliver, about an inch long, into the end of the first finger of the left hand. It entered about one-eighth inch external to the nail and reached nearly to the first joint. During the night he had a chill, his arm began to swell, and he experienced pain, which extended to the elbow. He poulticed the forearm for two days but as the pain and swelling persisted he called a physician, quite an unnecessary procedure, as he refused to abide by the doctor's decision, and only after much deliberation did he consent to come to the hospital.

At the time of his entrance the arm and hand were greatly swollen. The skin was dark, edematous, and in places gangrenous. Midway between the shoulder and elbow, on both the anterior and posterior aspects, there were two gangrenous areas about three inches in diameter, which had sloughed down to the muscle. There was extensive necrosis of the subcutaneous cellular tissue, and the skin, from the sloughing areas down, had the appearance of a bag of pus with the former acting as outlets for the overflow of the cast-off products. Under local anesthesia produced by ethyl chloride, twelve incisions were made and rubber-tube drains introduced. There was no difficulty in placing the drains, which were all quarter-inch in diameter and some of them three or four inches long, as the skin and subcutaneous tissue were lifted from the underlying structures. Thorough irrigation with sterile normal saline solution, was employed both before and after placing the tubes in position. The patient was placed in bed with the arm over the side and resting in a bath of sterile warm water. As no receptacle could be found which would hold enough water to cover more than the forearm and elbow, continuous irrigation with a syphon was employed for the unemersed portion above the joint. In addition to keeping the bath warm, it was changed every five hours and twice daily the tubes were removed and cleansed.

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* Read before the MICHIGAN STATE MEDICAL SOCIETY at the Grand Rapids meeting.

This procedure was kept up for fourteen days, at the end of which time improvement was so great that the continuous bath was discontinued, but the tubes were removed, cleaned, and the tracts washed out twice a day. Improvement continued, with the exception of the hand, which remained swollen and edematous. It was evidently fed by products from the original injury or had its vasomotor supply acted upon by the poisons. After amputation of the finger just above the second joint repair soon began to manifest itself. He has now recovered, so far as the infectious process is concerned, and has perfect use of the arm. The skin over the incisions and the areas above the elbow have been slow in healing and skin-grafting has been employed for the latter.

The insignificance of wounds, necessary for the introduction of septic material into the lympathic circulation, has led to too free use of the term idiopathic in the description of its causes. So slight an accident as the prick of a pin may pass unnoticed, and when noticed is of so frequent occurrence without serious results, that the laity become careless and the ignorant more skeptical. To the surgeon or his assistants it is of grave importance and calls for immediate intervention.

Cellulitis may result from the introduction of septic material into the deep lymphatic spaces. It may also come from extension of the infectious process from the superficial chain to the deeper vessels. Superficial wounds may therefore result as disastrously as deeper ones and a slight trauma of the skin be as fatal in its termination as one primarily involving deeper structures. We now recognize erysipelas as an infection caused by the streptococcus pyogenes, in which the bacillus and its toxins are primarily lodged in the lymphatics of the skin. This same lymphangitis is seen after infection of the finger, for example, when the characteristic red line from involvement of the superficial system of lymphatics extends up the arm, attacking in their order the supracondyloid and axillary lymph glands. At other times septic material is carried from the seat of inoculation to these glands direct and without involvement of structures along the line of travel. In such a case the glands become enlarged and painful and are the first symptoms of the inflammatory condition.

In the severer forms the lymph vessels become greatly swollen from involvement of their walls and as they contain many valves, the constrictions, caused at their situations, give them the feeling of knotted lines. These constrictions cause retention and hinder the flow of their contents and the process may now extend to the surrounding connective tissue spaces. Induration and edema follow with much swelling.

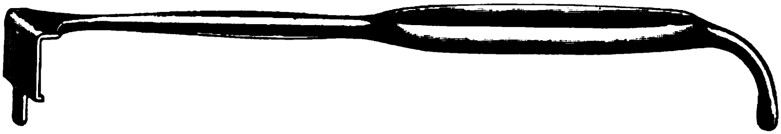
Reabsorption rarely takes place and suppuration intervenes. The skin becomes lifted from the deeper structures by the accumulation of pus. The latter burrows and many times to such an extent that subcutaneous lakes of pus exist, floating in which are large masses of dead cellular tissue. Pain at this stage is not so great as earlier, when it results not only from stretching and pressure, but from direct action of the toxins upon the filaments. The necrosis is not necessarily confined to the cellular tissue but may extend to muscle, tendon, and joint. The gangrenous patches of skin slough, giving more or less free exit to the imprisoned waste products, and healing, if it take place, results in formation of cicatrices limited only by the extent of the sloughing.

The graver complications are pyemia, hemorrhage, embolism or the involvement of the viscera. The first is more often encountered, while the second rarely takes place, as the walls of the blood-vessels seem less susceptible to the retrograde changes and many times remain intact with pus surrounding them. Embolism is more common in phlebitis or arteritis than in lymphangitis. When it does take place, the organs secondarily involved, depend upon the situation of the primary focus and size of the embolus. Vital structures may become involved from direct extension of the inflammation.

A NEW RETRACTOR FOR MASTOID OPERATION.

By EMIL AMBERG, M. D., Detroit, Michigan.

The accompanying picture illustrates a retractor which has proved in my practice to be superior to the ordinary retractor. It differs from the commonly employed instrument in having a slender elongated middle piece. The object of this prolongation is to keep just enough of the cutaneous canal away from the osseous canal so that the spina suprameatum and a small portion of the upper and posterior osseous canal are exposed during the operation. While the main part of the retractor is holding the auricle forward the prolongation serves the latter purpose.



FOUR-NINTHS REGULAR SIZE.

The advantages of this retractor are that it renders the operation somewhat shorter, easier and safer, inasmuch as during operative procedure the landmarks are always in view.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, APRIL, 4, 1904.

THE PRESIDENT, JAMES HAWLEY BURTENSHAW, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

THE paper of the evening, on "The Physiological Function of Menstruation and the Part Played Therein by the Fallopian Tubes," was read by Doctor J. Riddle Goffe.

The various theories to account for menstruation and an interesting historical sketch were presented. The rut of animals was considered an analogous function to that of menstruation. The process in woman is regarded as analogous to the moulting of birds, the shedding of hair and horns by the deer, and the shedding of leaves by a tree. All the processes of life go in circles, determined more or less completely by the environment. All quadrupeds, as well as bipeds, experience a physiological function similar to menstruation, but the secretion does not appear externally in all of them. The appearance of the discharge in bipeds is due simply to posture, gravity bringing the discharge to the surface of the body. The same processes go on in quadrupeds, but on account of the position of the uterus it is retained in that organ, reabsorbed through the lymphatics into the blood, and finally consumed in the vital processes or eliminated through the excretory glands. In the native state wild animals experience a rut once a year, but domesticated animals, probably due to their environment and more luxurious care and keeping, experience the phenomena, or analogous phenomena, more frequently. The monkey has been observed to menstruate five times a year, and the cow to have a vaginal discharge at intervals of about three weeks. The monthly recurrence in woman is thought to be due to her environment, and the result of civilization and its attendant luxuries. Life under these circumstances becomes more artificial; every factor in life is sought as a source of pleasure, and the race becomes more sexually inclined.

Menstruation is usually defined by the best authors as a monthly hemorrhage. The speaker offered the following definition: Menstruation is a frustrated attempt on the part of nature to reproduce an individual of the species. The external sign of this is the menstrual discharge. Its *raison d'etre* was described as follows: An ovum is thrown out from the ovary and gradually finds its way toward the uterus. Nature at once begins preparations for its reception; the nervous system becomes exalted to a high degree of functional activity; the blood supply to these parts is increased; the endometrium, which is the soil in which the ovum is to be implanted, becomes turgid, soft and velvety; its epithelial cells swell and multiply, and every preparation is made to nourish the welcome guest and give it a home. If, on its way, the ovum has been fructified it is ready to respond to this bountiful preparation, takes root, and grows. But if the fecundation has failed, the guest is incompetent to receive the hospitality extended and is cast off. The preparations are also eliminated; the exhuberant epithelial cells are exfoliated; the delicate capillaries sweat drops of blood by diapedesis, or burst and discharge their contents; the congested and engorged glands secrete and excrete profusely, and a thin mingled mass of epithelial cells, blood and mucus comes away in the form of menstrual blood.

As a proof that some of the menstrual discharge comes from the Fallopian tubes, two cases occurring in the author's private practice were narrated. Both patients had been subjected to vaginal hysterectomy and in each instance the ovary and tube of one side had been left *in situ*. In removing the pelvic drain during convalescence, the proximal end of the tube in each case was accidentally dragged down into the vagina and caught in the vaginal scar. These patients both menstruated every month after the operation, and the blood was seen to trickle into the vagina from the open ends of the tubes. These observations were continued for several months, and then, in fear of the possibility of tubal pregnancy, the ends of the tubes were sealed up. Experience in these cases seemed to establish so far as such observation can, the fact that the tube, at least in the absence of the uterus, actually performs the function of menstruation.

REPORTS OF CASES.

SYPHILITIC PERIOSTEITIS.

DOCTOR W. R. TOWNSEND: This patient, aged twenty-six years, sought aid for a syphilitic condition of the wrist. Five years ago a diagnosis of tuberculosis of the wrist was made, and a partial excision performed, which resulted in a movable joint. Two years ago a tapering swelling was noticed at the phalangeal joints, attaining its greatest diameter at the articular surfaces. When first seen by me, three weeks ago, I had *x*-ray photographs of the hand taken, and by this means established the diagnosis of syphilitic periosteitis, with joint inflammation. This condition undoubtedly existed when the excision was done for the relief of the supposed tubercular disease. It was an excellent illustration of the value of the *x*-ray in diagnosis, and especially in differential diagnosis. Radiographs of a tubercular wrist are also shown, in order to bring out clearly the differences between a syphilitic and a tubercular process. The patient had been on antisyphilitic treatment for three weeks, and in that time the pain had decreased, motion had increased, and her feet, which were affected by a similar pathological condition, were much improved, making walking much easier. I likewise show a radiograph in which the bones of the ankle are affected by syphilis, and, by way of comparison, one of a foot in which the bone is normal, to illustrate the changes which the bone and surrounding tissues undergo in syphilitic periosteitis.

MYOSITIS OSSIFICANS.

DOCTOR TOWNSEND: I also desire to report another case. This disease, in which the muscles undergo bony changes, is very rare. The most common cause is traumatism, and a Japanese surgeon has reported several cases since the beginning of the Russo-Japanese war, in cavalry officers, whose adductor muscles have been damaged and this condition has resulted. When there is no history of traumatism, there is no clue as to why certain muscles should be affected. In the case reported, such a large mass of muscle is infiltrated with bone that there was no motion at either knee or ankle. On one side the femur and muscles are normal, which can be distinctly seen by means of the *x*-ray apparatus; on the opposite side, extending from the pelvis along the track of the adductor muscles, there is a bony deposit almost similar to the bone in the shaft of the femur.

The second radiograph shows the process extending into the lower leg. The flexed bone can be seen, and extending to one side, a solid mass of infiltrated bony muscle. In a short time all the muscle on that side of the limb will be affected; and there will be a solid bony mass in addition to the fibula itself. The muscular motions, of course, will be lost, and the patient may have to lose the lower extremity. The prognosis in these cases is very bad and treatment is unsatisfactory. Such cases are rare when, as in the present instance, there is no history of traumatism.

HYSTERICAL COUGH.

DOCTOR G. B. MCAULIFFE: This young woman is suffering from paroxysms of hysterical coughing which resemble in sound the barking of a dog. About one year ago she began to cough, and has coughed almost uninterruptedly ever since. Examination shows no local lesion, and the cough seems to be purely laryngeal. Nothing abnormal is to be seen in the larynx except a slight redness over the arytenoids. Extralaryngeal applications of electricity afford relief, but internal medication has been of no avail. The application of adrenalin by means of a spray gives relief for twelve or fourteen hours, when another paroxysm comes on. This, however, is merely a symptomatic treatment of the cough.

DISCUSSION.

DOCTOR D. J. MCDONALD: I saw the patient about a year ago, and applied electricity each day, first using the high-tension and later the galvanic current. When first seen by me she had presented every symptom of hydrophobia, barking and foaming at the mouth, but was able to walk about. Under treatment her condition improved so that the attacks occurred only monthly, and later only once in two months. She was also given adrenalin and arsenic internally.

FRACTURE OF THE BASE OF THE SKULL.

DOCTOR JOHN A. BODINE: I wish to show a boy who has been operated on by me at Saint John's Hospital for fracture of the vault involving the base of the skull. The patient, while coasting down a long hill, having acquired a terrific impetus, crashed into a wagon, his head striking the hub of a wheel. The temporo-parietal region of the skull was not unlike an eggshell crushed in. He was taken to the hospital in a condition of profound shock, and it was thought unwise to resort to any operative procedure to relieve the brain pressure or to stimulate with salt solution for fear of inaugurating intercranial bleeding. This condition of stupor lasted three days and three nights, when his condition began to improve. With practically no anesthesia, the larger portion of the right parietal bone was removed. The fracture was compounded and extended through the temporal bone and into the base, and was again compounded in the vault of the pharynx. He had bled profusely into his stomach, which blood was vomited. When all of the depressed fragments of bone had been removed the boy's condition improved steadily until he was out of danger. Some time during the second week after the injury right-sided facial paralysis, paralysis of the right external rectus muscle of the eye and loss of taste in the right side of the tongue were noted. In addition, there was symmetry of the soft palate during phonation. The study of the anatomy of the parts thus involved demonstrated clearly the line of fracture at the base of the skull. With facial paralysis, with symmetry of the soft palate and loss of taste on the right side, the fracture must have included the bony parts traversed by the facial nerve between the geniculate ganglia and the origin of the chordæ tympani nerve. Furthermore, as there was paralysis of the external rectus muscle of the eye, without involvement of any of the nerves that lie in juxtaposition with the external rectus in the cavernous sinus, the line of fracture must have been near the posterior clinoid process of the sphenoid bone. It does not seem reasonable to expect that the ophthalmic nerve would have escaped, had the line of fracture been anterior to these processes. The fact that the paralysis came on two weeks after the receipt of injury would indicate that it was due to an inflammatory process of the nerves, making the prognosis as to the ultimate recovery of these paralyzed muscles better than if the paralysis had been coincident with the injury.

DEFORMITY FOLLOWING FRACTURE OF THE CONDYLE OF THE HUMERUS.

Doctor Bodine: I also wish to show a case of deformity following fracture of the external condyle of the humerus. When the patient was seen the arm was swollen, and a most careful examination under anesthesia demonstrated nothing more than that it was a fracture of the external condyle involving the joint. It was treated in a position of acute flexion, the hand midway between pronation and supination. When healing had occurred and the arm was taken down, the existing deformity over the external condyle was found. Nearly a full range of motion of the joint has been secured. Since this patient's injury I have seen two other fractures of the external condyle identically like this one. The deformity is due to the fractured piece being turned at an angle of one hundred eighty degrees, the surface looking toward the skin, and there is but one way to remedy it—by open suture with reposition of the fragment.

This operation was done, under cocain anesthesia, in the last two cases seen, with perfect results.

REGENERATION OF THE RADIUS FROM ITS PERIOSTEUM.

Doctor Bodine: The next patient is a splendid example of a regeneration of the radius from its periosteum. Two years ago the little patient sustained an ordinary Colles' fracture. At a near-by dispensary the arm was put up between an anterior and posterior splint, padded with cotton, the bandage including the hand almost to the finger tips. As this happened in July and the boy was not told to return for three days, violent cellulitis of the arm developed. The boy was seen by me three days after being injured, and when the splint and dressings were removed two lines of lymphangitis, starting from the interdigital clefts of the three outer fingers, could be plainly seen. At the time of the injury the boy was playing on the street, and the accumulated germ-filth in the interdigital clefts, under the moist perspiration induced by the dressing, was the port of entry of the infection which caused the cellulitis. It is a practical demonstration of the fact that no fracture should be put up without the skin being in a condition of surgical cleanliness. An analogy of this is seen in infection of the glands of the groin from filth around the frenum, without any break in the mucous membrane. The entire radius necrosed and was removed. The boy has a strong arm, flexion, pronation and supination being almost perfect, but there is considerable deformity.

COLLES' FRACTURE.

Doctor Bodine: The next patient is an example of Colles' fracture, the deformity not being corrected at the time of injury. There has been entire loss of function, immobilization of the wrist, loss of supination and pronation, as well as deformity. The operation consisted in chiseling through the line of fracture, the incision in the skin being placed on the dorsal end of the wrist rather than at the outer side of the radius, because of the uncertain position of the radial nerve. After correcting the deformity of the radius it is usually found that the hand is still in abduction and there is a projection of the lower end of the ulna, which can only be corrected by taking a section out of this bone. This has been done, and all the motions of the wrist and forearm have returned and the deformity has been entirely corrected. This patient was operated on two years ago, and a second patient is also shown, operated on three months ago, with the same result. I present these casts showing the condition of the arm prior to the operation. A third patient was operated on three weeks ago. The after-treatment in these cases of ancient Colles' fracture is the same as in a recent fracture, that is, a straight splint on the posterior aspect of the arm and the hand carried into extreme abduction, with flexion of the wrist. I do not believe it wise to ever put the arm between an anterior and posterior splint in Colles' fracture.

UNILATERAL ANKYLOSIS OF THE JAW.

Doctor Bodine: I also wish to show a patient, eighteen years of age, who had an attack of scarlet fever sixteen years ago, followed by a suppurative parotiditis of the right side. A number of incisions were made to let out the pus, as the scars of the face show. Unilateral ankylosis of the lower jaw followed. The patient has been brought up, throughout his childhood as well as his adolescence, entirely on liquid food, his teeth being closely in apposition. Some four years ago an attempt was made at one of the hospitals to relieve the condition. The scar of this operation gives a clue as to what the surgeon attempted to do. The skin incision was above the exit of the facial nerve. Apparently a linear osteotomy was performed, but it failed to benefit the patient beyond permitting him to separate his jaws about a quarter of an inch. My incision was placed just above the angle of the jaw. The contracted soft parts were separated from the bone, and then, instead of a linear osteotomy, a triangular section of the ramus was removed, the base of the triangle being the posterior border. Still the patient could not open his mouth, and the points of scissors were passed through a cleft in the bone, and the contracted internal pterygoid muscle clipped. The mouth could then be opened to its full extent. This case beautifully shows that sixteen years immobilization of a normal joint, that is, of the opposite healthy joint, does not produce ankylosis.

DEMONSTRATION OF TECHNIQUE OF SKENE'S METHOD OF ELECTRO-HEMOSTASIS.

Doctor W. R. Pryor: The celebrated Scotch surgeon, Keith, whose name is particularly associated with the removal of massive abdominal growths, treated the pedicles by grasping them with a powerful crushing-clamp, and by means of a superheated iron, heated this clamp so as not to burn the pedicle but to cause it to become dry and parchment-like. In order that this might be accomplished, and yet not to apply too much heat, so as to produce a dead tissue, as in an ordinary clamp and cautery operation, he had to exhibit an unusual acquaintance with the details. However, his pupil, Skene, of Brooklyn, became impressed with the thoroughness of the hemostasis which Keith secured, with the absence of pain in the stump, the absence of suppuration, and with the smooth convalescence of the patients, and having seen the complications which arise from the application of ligatures in certain situations, he, with the assistance of a skilled electrician, devised instruments for very simply doing what Keith did by a complicated technique, and with absolute precision.

The vessels to be obliterated are grasped with heavy forceps, very much like a pile clamp; adjacent tissues are protected either by means of a nonconducting shield or gauze pad, and as the clamp compresses the tissues a current of electricity is allowed to run through the clamp, heating it to about one hundred ninety degrees. Taking an ordinary ovarian pedicle as an example, a fair compression is secured for one minute; then for another minute, more compression; and then for another minute, more still, the instrument being all the while heated by means of electricity to one hundred ninety degrees. Upon removal of the clamp the pedicle is found converted into a tissue exactly similar in appearance to catgut, translucent, in thickness only one-eighth the original pedicle, perfectly dry and with the veins, arteries, nerves and muscular fibres all coagulated into one mass, in which one cannot be distinguished from the other. The softer the tissue, the slower should be the compression, and the less the time during which pressure should be applied.

When my attention was first drawn to this method, a number of years ago, I said that it would open up to the possibilities of the vaginal section certain cases which never had been attempted that way, but I was unwilling to apply to my patients this method of controlling vessels until I had experimented. I therefore secured fresh arteries and sealed them by Skene's method. Upon subjecting them to drastic pressure, I found that it required six times the normal amount of intraarterial pressure to open up the mouths of the vessels closed in this way; for instance, assuming that the pressure within an ovarian vessel is equal to three pounds, such pressure would have to be eighteen pounds, or greater than the aorta, in order to open the vessel. It is necessary, before applying any of these instruments, to have them thoroughly coated with sterile vaseline, otherwise they stick to the tissues.

This method of occluding vessels should not be regarded as an absolute substitute for the ligation of large trunks by Wyeth's method of ligation in continuity, with approximation of the inner coats of the vessels without rupture, but it is a substitute for ligation of vessels in certain situations and under certain conditions. We all know the disadvantages of ligating en masse the edematous and necrotic pedicle of a twisted ovarian tumor, or the broad ligament in an ectopic gestation associated with infection and edema. We also know the disadvantages of tying off a pus focus, such as a gangrenous appendix or pyosalpinx. Again, in tying off certain very fragile pedicles, such as in ectopic gestation or sepsis, we see our ligatures cut through the swollen and friable tissues, producing a disagreeable degree of bleeding. Again, in hemostasis in vesical and rectal polypi, in erectile tissue about the vagina, in the tongue and spleen this method of hemostasis is far superior to any other. It has been found in the abdomen, where it is intended to perform intestinal resection, that two broad lines of absolutely sterile and obliterated gut-ends can be approximated without the escape of a bubble of gas or feces to soil the suture-line; and afterward manipulation with two fingers opens the occluded ends, so as to make a continuous lumen. The twisted pedicle of an ovarian cyst, the infected pedicle of a dermoid cyst, and the highly vasculated pedicle of a pedunculated fibroma may be removed by this method with absolute satisfaction and without the introduction of any suture material.

In my hands its chief application in operations within the abdomen has been in the performance of my operation of total abdominal extirpation of the cancerous uterus and adenexa, with preliminary hemostasis, produced by ligation of the ovarians, iliacs and obturators together with extirpation of the upper third of the vagina. Skene's method of electrohemostasis is the only procedure by means of which I have ever been able to control bleeding from the erectile tissue about the vagina in this operation.

It would seem to me an ideal method to apply in extirpation of the gall-bladder at its neck. The removal of the spleen, I believe, can be accomplished by this method with an insignificant mortality because secondary hemorrhage is impossible and much time is saved. I find that my acquaintance with this method of hemostasis enables me to treat all my cases of ectopic gestation through the vagina and without abdominal section. I have yet to meet an ectopic gestation which I cannot so treat, and can conceive of its failure only where the products of conception are too large to pass the vaginal outlet. It has enabled me to remove dermoid cysts through the vagina and all ovarian cysts which were small enough to pass through this canal.

I will now demonstrate to you upon this living animal this method of controlling bleeding. We will first take the small intestine, which in the dog is many times thicker than in the human being. Assuming that I wish to make a resection of the intestine or that I propose to close the two ends, where resection is to be followed by end-to-end or side-to-side anastomosis, I clamp the gut in two places and turn on the current. I push the clamp to the first notch, and at the expiration of half a minute we see a slight bubbling along the sides of the clamp. The heat produced is not too great for the touch, although it is disagreeable to the fingers. At the expiration, the clamp is pushed down one more notch, and now the bubbling is quite energetic. After the second minute the clamp is pushed to the third notch, or as far as it will go, and the tissues show the escape of very little steam, but the structures touching the clamp have become white. In two and one-third minutes the clamp is taken off and the stump inspected. On one side I find that I have not applied sufficient pressure and heat, whereas on the other, the intestine which was grasped with the clamp is converted into a thin ribbon of translucent, parchment-like tissue. I reapply the clamp for a half minute to the other side, and the process is complete. Now, with scissors, I cut through these thin ribbons of tissue to see that the gut ends are absolutely closed. Without escape of gas and without escape of feces we have produced two stumps which are bloodless and uncontaminated by intestinal filth, and in which you can do such suturing as you see fit.

The dog is pregnant, nearly to the full term, both cornua being filled with puppies. By manipulation I separate a portion of the uterine muscle and grasp it with the forceps, allowing it to remain on three minutes. I then cut the uterine muscle and you will find absolutely no oozing. The large uteroovarian artery, which goes to the cornu, I purposely sever, so that you may see it spurt; then I grasp it with the forceps and subject it to heat and pressure for two minutes, and it is perfectly dry. Turning the animal over and pulling out the spleen, which in the dog has a head and quite a tail, I grasp it at the point where it is about two inches wide with the forceps, turn on the current, and by gradually increasing the pressure for one and a half minutes you will notice that this highly vascular organ is, at the point of pressure, converted into a thin sheet of parchment, through which one can almost see. With the scissors I sever this point and no blood escapes. I now take the large bunch of veins in one broad ligament, clamp them, heat them to one hundred ninety degrees for one and a half minutes, remove the forceps and cut the stump, and no blood escapes.

Doctor Skene was not content with the results in more than two hundred applications of his method, and by experimentation and the use of the microscope in the hands of an expert microscopist he demonstrated that the pedicle never became infected and that the current in the vessels never became reestablished; that, whereas the tissue did become organized, it always remained as a homogeneous mass, in which it was impossible to identify nerves, muscular tissue, mucous membrane and vascular walls. My enthusiasm for this method of hemostasis is more than warranted, I can assure you, for I have applied it in double ovariotomy through the vagina, in the removal of pus sacs, in the removal of septic dermoid cysts, and many, many times in the removal of ectopic sacs, and in the removal of hemorrhoids and rectal polypi. I have found it to give me some satisfaction in work in the abdomen in the class of cases in which ligation is undesirable, namely, soft tissue, edematous tissue, necrotic tissue and septic foci.

In transforming the current one may use either a liquid transformer and coil or an ordinary motor transformer; or one may employ a galvanic cautery battery with the reostat. As to the expense, I have found that I saved in the first four months I had the instruments what my ligature material would have cost me. So far as the patient is concerned, not only is the method superior under the circumstances in which it should be used to application of ligatures, but the stumps are painless.

ORIGINAL ABSTRACTS.

MEDICINE.

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AND
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RECENT FACTS CONCERNING THE BACILLUS TYPHOSUS AND ALLIED BACILLI.

Action of Radium on the Agglutinating Property of the Blood of Typhoid Patients.—Jogn (*Vrach,* December 9, 1903) reports that he was able to completely destroy the agglutinating power of typhoid serum by subjecting it to the prolonged action of rays of bromide of radium. This investigation was carried out on nineteen cases of typhoid fever of different ages and sex and of varying degrees of agglutinating power. The influence is attributed to the bromide rays.

THE USE OF DEAD TYPHOID BACILLI FOR THE AGGLUTINATION TEST.—Proscher (*Centralblatt f. Bakt.*, 1902, XXXII, 400-403), working in Ehrlich's laboratory, was the first to employ dead typhoid bacilli for diagnostic purposes. He killed twenty-four-hour typhoid cultures by adding one part of formalin to one hundred parts of culture, after standing for twenty-four hours, poured off the supernatent fluid and kept it in a sterile bottle as a stock solution. The test is applied by adding the suspension of bacilli, or, as Ficker calls it, the diagnostic solution, to the blood serum, which is diluted with physiological salt solution. The macroscopic method is employed. Somewhat later Ficker describes what is now known as Ficker's test. It is practically the same as that described above. Priority, however, is due to Proscher.

* * *

DIFFERENTIATION OF BACILLUS TYPHOSUS AND BACILLUS COLI COMMUNIS BY MEANS OF THE PHOTOGRAPHIC PLATE.—Stevenson of the Pathological Laboratory of Trinity College, Dublin (*British Medical Journal,* April, 30, 1904) reports an interesting phenomenon that occurs on the sensitized photographic plate when the products of certain bacterial cultures are applied to its surface. He makes the assertion that this method renders it easily possible to discriminate between bacillus typhosus and bacillus coli communis.

Method.—Cultures are first made in broth. After twenty-four hours a few drops of each culture are placed upon the sensitive surface of a gelatino-bromide photographic plate and spread out so as to wet an area one or two centimeters in diameter. A red light is necessary. The plate is now covered with a dish and left for forty minutes, after which it is removed, the superfluous fluid drawn off with a pipet and the plate developed in the usual manner.

Reaction.—The coli plate will show a heavy reduction of the silver salt, while the typhoid plate will show only a very faint reduction, scarcely noticeable under some conditions. The colon culture of twenty-four hours, when compared with the typhoid culture of any age up to thirty-three days, gives the more marked reaction. After sterilization of the broth cultures the reaction persists. Colon and typhoid cultures from various sources were tested and the results were always the same.

* * *

TYPHOID FEVER, SCARLET FEVER, AND MEASLES IN THE CHIMPANZEE AND LOWER ANTHROPOID APES.—Grunbaum (*British Medical Journal*, April 9. 1904) reports that he has been able to fulfill Koch's third postulate with bacillus typhosus. Inoculation of the chimpanzee by giving the bacilli in milk resulted in a somewhat typical infection, especially in an anatomical way. The involvement of Peyer's patches, changes in the mesenteric glands, the enlarged spleen, and the recovery of bacillus typhosus from the spleen were marked. The agglutination test was positive in one case with a dilution of one to one hundred. Usually the reaction occurred in rather low dilutions but was always absent before inoculation. The author gives pictures of the gross pathological findings and of a microscopic section through a Peyer's patch.

Experiments with scarlet fever and measles may be considered negative. A few interesting phenomena, however, occurred.

* * *

AGGLUTINATION OF BACILLUS COLI COMMUNIS BY THE BLOOD SERUM FROM CASES OF ACUTE MENTAL DISORDERS.—Johnson and Goodall (*British Medical Journal,* April 9, 1904) report the results of their investigation upon the power of the blood serum from one hundred cases of mental disease to agglutinate bacillus coli. Their conclusions are as follows:

(1) In fifty per cent of the total cases of acute insanity there was agglutination, whereas this was present in only 15.5 per cent of the controls.

(2) The agglutination was partial in the great majority of the cases (39 per cent.)

(3) In those forms of the disease in which the cases were sufficiently numerous to permit of percentages being taken (mania and melancholia) the preponderance of partial over-good agglutination was also obvious.

(4) The percentage of agglutination (good and partial) was greater (58.5) in the cases of melancholia than in those of mania (45.2).

(5) The percentage of good agglutination was greater in melancholia than in mania.

(6) Even when the disease is quite recent in duration there is as often as not a failure to agglutinate. D. M. C.

SURGERY.

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SIMPLE METHOD FOR THE REDUCTION OF LUXATIONS OF THE HUMERUS.

ELEANORE BOULTON, M. D., of Pennsylvania, discusses this subject in the *American Journal of the Medical Sciences* for June, 1904. He has studied twenty-four cases of uncomplicated reductions and finds the method applicable to all cases of dislocation of the upper end of the humerus. The method is described as follows:

The surgeon stands behind the patient, manipulating with the hand, which corresponds to the side upon which the lesion exists. The hand of the operator is partially closed, the thumb extended, and the wrist pronated. The ball of the thumb is placed below, against, and parallel to the margin of the scapula on the axillary border, just external to the inferior angle. Firm pressure is exerted and the wrist is slowly and steadily supinated, exerting pressure upward and backward, thus pushing the lower angle of the scapula upward toward the median line. The lower lip of the glenoid cavity is so depressed that the head of the humerus slips back into place. In the subspinous dislocation, where reduction fails by this method, pressure may be made upon the head of the dislocated humerus in the direction of its long axis; this will be sufficient to complete the reduction. In subcoracoid or subglenoid dislocations the operator places his hand upon the patient's shoulder, the base of the ring finger resting upon the acromion process, the ball of the finger placed below the clavicle. The thumb is placed beneath the spine of the scapula as far to the inner end of the spine as possible. Pressure is then made with the balls of the fingers, holding the acromion process in place. The elbow is extended while steady pressure is exerted downward, inward and backward with considerable force.

The following advantages are claimed for the method:

(1) There is little risk of further damage, since a short lever is used instead of a long one.

(2) In cases in which fractures of the humerus, or of the bones of the forearm are present, the surgeon is enabled to effect reduction in a manner which does not necessitate the handling of the limb.

(3) The patient does not suffer any great amount of pain during the procedure.

(4) The patient is apt to be docile, since he does not expect reduction to be effected from the rear, and without manipulation of the arm.

C. G. D.

OBSTETRICS.

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GONORRHEA DURING THE PUERPERIUM.

Martin (*Berliner Klinische Wochenschrift,* Number XIII, 1904) has a very important article on this complication. After a short résumé of the observations of others upon the appearances of fever in puerperal women, affected with gonorrhea, the author reports his own investigations from thirteen cases in the Greifswald Klinik. Eight had a fever, disturbed puerperium, and six had fever late in convalescence. An interruption of pregnancy through abortion did not take place. The delivery in each case was perfectly normal. During the puerperium, however, the fever shaped its course with the temperature only slightly elevated above the normal. No marked disturbance in the normal involution of the uterus was observed.

The prognosis of gonorrheal disease in respect to pregnancy, delivery and the puerperium, the author regards as doubtful, but further states that its final outcome is not to be considered grave.

The treatment is mainly prophylactic. Active therapy is, as a rule, not productive of good results, although, in the hands of some investigators the introduction of yeast in the cervical and urethral canals has ameliorated the condition. Martin advises the greatest care in radical operations. Where possible they are to be avoided. W. H. M.

MANUAL REMOVAL OF RETAINED PLACENTA WITHOUT RUBBER GLOVES.

AHLFELD (*Zeut. für Gyn.*, Number XI, 1904) reports that, in six thousand eight hundred births, he has had only fifty-three cases of manual removal of the placenta. In every case the operation was performed without rubber gloves. Five patients died, not on account of the operation, whose mortality per cent was 0.%. Ahlfeld sees no reason why rubber gloves should be used in these cases. W. H. M.

TETANY IN PREGNANCY.

VOELKER (*Monat. für Geburt. and Gyn.*, Band XIX, Heft 1) has an article on this subject. The tetany occurred in a thirty-nine year old, otherwise healthy, multipara (9-Para) for the fifth consecutive pregnancy. The tetanic attacks ended with the delivery. The confinement and subsequent suckling of the child induced no return of the malady. Even the normal contraction of the uterus during the puerperium caused no fresh onset of the trouble. Connection with another somatic condition, other than pregnancy, could be excluded.

As therapeutic agents, the author recommends chloral hydrate and potassium bromide. Ergotin preparations are to be avoided. In severe cases, artificial interruption of pregnancy may become necessary.

W. H. M.

PEMPHIGUS NEONATORUM SIVE CONTAGIOSUS.

HEUGGE (*Monatschrift für Geburtshülfe und Gynekologie*, Band XIX, Heft 1) reports an epidemic of this disease in the Greifswald Frauenklinik. The disease first made its appearance in a lying-in patient, who transmitted it to her child. From this same focus, another lying-in woman was infected and later three more children. The author has diagrammatically illustrated the course of the infection as follows:

In every case blebs and countless numbers of small furuncles were found in the neighborhood of the anal sulcus. In two cases, furunculosis characterized the disease. The exciting cause was the staphylococcus aureus, which was isolated from the fetid lochia of the first patient. From the bacteriological examination, Heugge regards this disease as an infection of the outer cutaneous layer with the staphylococcus aureus. He recommends isolation of infected patients, excision of the fresh blebs, and a thorough washing of the field, first with fifty per cent alcohol, then with mercuric chloride (one to one thousand).

VAGINAL CAESAREAN SECTION IN PLACENTA PREVIA: TECHNIQUE OF THE OPERATION AND ITS RELATION TO OTHER METHODS OF UTERINE DILATATION.

Duhrssen (*Zentralblatt für Gynækologie,* Number XIII, 1904) reports a very interesting case of placenta previa, on which his vaginal hysterotomy (hysterotomit anterior et posterior) was performed, and which, the author affirms, emphasizes the importance of splitting the anterior and posterior uterine walls in all cases wherein a rapid emptying of the uterus is indicated.

The patient was a thirty-year-old multipara (V-Para) with placenta previa, which, on account of the profuse hemorrhage, made rapid delivery of the fetus necessary in the fifth month of pregnancy. A strong atonic secondary hemorrhage followed, which was easily controlled by packing the uterine cavity with iodoform gauze. The healing and convalescence were uneventful.

After replying to those opposed to his method, the author further emphasized the importance of this operation in the ninth month of pregnancy, when a hasty removal of the fetus is indicated, and cites sixteen cases in the literature where a living child was delivered in all but five instances.

In all indications for rapid delivery on account of dangers to life of both mother and child, Dührssen advises the performance of his vaginal Caesarean section after the ordinary methods of uterine dilatation have failed. His method, he claims, in the hands of modern gynecologists is to be considered a typical, safe, and not dangerous one. W. H. M.

PEDIATRICS.

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ATTENDING THE LORENZ ORTHOPEDIC CLINIC IN VIENNA.

ENURESIS.

Doctor Bilby (*American Medicine,* March 5, 1904) concludes, after three years' observation in the State Industrial School, that in institutions, at least, enuresis is due in about ninety per cent of cases directly to masturbation, and says the treatment in these cases is usually attended with good results if the condition is not of too long standing. The treatment should be directed along two lines: first, by appealing to the moral sense and warning the child of the dangers of evil practices; second, by improving the physical condition and endeavoring to relieve the irritable or congestive condition of the lumbar cord. Circumcision was performed almost as a routine, not because there was phymosis, but for its moral impression.

THE FATALITY OF WHOOPING-COUGH.

ELIZA ROOT (*Pediatrics*, February, 1904) says the mortality from pertussis is nearly as great as that from scarlet fever, a fact frequently overlooked by the profession. Statistics taken from the records of nine of the principal cities of the country showed a mortality for one year of one thousand two hundred sixty-six from pertussis and one thousand four hundred seventy-three from scarlet fever, and the author calls attention to the fact that the after effects of pertussis are often decidedly serious, lesions of the central nervous system, visual disturbances, and even complete deafness having been repeatedly noted. The author thinks that greater care should be made in the line of prophylaxis and that pertussis should be placed on the list of diseases under control of the public health authorities, be subject to quarantine and other preventive measures. While its control may not be as complicated or as far reaching as scarlet fever, nevertheless municipal control of pertussis is strongly to be advocated.

THRUSH.

H. ILLOWAY (*Medical News*, February, 27, 1904) in describing this disease says though most often only a trifling affection, that is readily cured with some simple remedy, it may nevertheless at times become a very serious trouble—serious enough to take the life of the child. It is known that the disease may develop in a healthy child, whose oral cavity is in a normal state. The parasite being always introduced from without, its development may be prevented by careful attention to hygienic requirements. even in many grave cases of gastrointestinal disease. Inanition soon sets in and a rapid diterioration of vitality ensues, due to the inability of the child to nurse. The author has had excellent results from the use of hyphosulphite of soda in combination with glycerin and distilled water, given internally and applied topically with a camel's-hair brush. In severe cases he uses half a drachm of tincture of iodin in three and one-half drachms of glycerin. This mixture is applied to the tongue, gum and cheeks with a large camel's-hair pencil and the effect is remarkable.

CHRONIC MYOCARDITIS IN CHILDREN.

ACUTE myocarditis may develop into chronic, or the latter may develop independently of the acute process, says Zuppinger (*Archiv. fur Kinderheilkunde*, 1904, XXXV). The acute infectious diseases are the most frequent causes of acute myocarditis and as these diseases are more frequent in children acute myocarditis is more common among them, but it is far from common even among children. In the autopsy records of the Children's Hospital of Vienna during the past ten years there are only five cases of acute myocarditis reported, three of which followed diphtheria and two occurred after some simple ulcerative process. The author reports two cases. Acute myocarditis developed in the first during diphtheria and death followed in six weeks with symptoms of cardiac insufficiency. In the second case there was great hypertrophy and dilatation and a mural thrombus was situated at the apex of the right ventricle. The latter occurred in a boy, aged ten years, with a history of measles four years previous and an attack of pneumonia one year after the measles.

CHICKENPOX CONCURRENT WITH SMALLPOX.

Bourland says (*Medical News*, January, 1904) that from a study of a number of cases of chickenpox concurrent with smallpox, he has come to the following conclusions:

(1) The concurrence of smallpox in no way caused the course of my cases to depart from that typical of chickenpox.

(2) Vaccinated and unvaccinated children showed equal susceptibility to infection and the course of the sickness was the same in each class; this fact excludes varioloid.

(3) None of my patients had ever been exposed to smallpox or had ever had the disease.

(4) No adults were attacked notwithstanding the absence of vaccination in a majority.

(5) Five of the children exposed had had chickenpox in a previous epidemic, these previous attacks conferring immunity except in one instance.

(6) Smallpox and chickenpox are distinct pathological entities and though in intimate association neither disease influences in any way the natural course of the other.

LARYNGOLOGY.

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THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

Felix Cohn (*New York Medical Record*, December 26, 1903) in a broad way divides the anomalies of the septum into three groups: (1) Exostoses and ecchondroses, that is, circumscribed deviations from the median line; (2) displacements of the whole or greater part of the septum itself from the median line in the course of either the sagital or the horizontal axis, or in both planes; (3) displacements of the septum combined with various forms of exostoses.

The second group is considered in connection with submucous resection. The operation consists of making incisions through the mucous membrane on the convex side and separating the mucous membrane flaps from the cartilage. The cartilage is then incised, the mucous membrane separated from the concave side and the deflected portion of the cartilage removed. The flaps are then brought together and one or two stitches are taken if necessary. The nose is packed lightly with gauze. He gives some of the indications and contraindications for the submucous operation, and cites various authorities, mostly German. No mention is made of the excellent work of Doctor Otto T. Freer, of Chicago, who has brought this operation to a high degree of perfection.

SOME REMARKS ON THE ETIOLOGY OF HYPERPLASIA OF THE PHARYNGEAL TONSIL IN THE LIGHT OF RECENT INVESTIGATIONS.

THOMAS J. HARRIS (*American Medicine,* January 2, 1904) considers some of the factors in their causative relation to adenoids. Heredity, tuberculosis, syphilis, scrofula and inflammation are considered. The following are the author's conclusions: (1) The pharyngeal tonsil possesses a distinct motion or function. (2) This function is of a nature of a defense against the entrance of bacteria and consists in a certain irrigation of the tonsil surface by a lymph stream loaded with lymphocytes. (3) This protective function carries with it the inherent qualities of the tonsil to enlarge on the slightest irritation for the affording of further power of defense. (4) This inherent tendency of the tonsil to enlarge is seen in the frequent recurrence of the tonsil after removal. (5) Strictly speaking, then, in the great majority of cases such enlargements are not a pathologic, but a physiologic process.

THE DEPENDENCE OF AURAL AFFECTIONS UPON THE NOSE AND THROAT.

H. E. SMYTH (*Laryngoscope,* January, 1904) reports five hundred cases studied, two hundred nine of which consisted of ear affections accompanying disease of the nose or nasopharynx, ninety-three of ear affections unaccompanied by such disease, and the remainder, or one hundred ninety-eight, of nose or nasopharyngeal affections without involvement of the ear. It will be seen that more than two-thirds of the ear cases accompanied disease of the upper respiratory tract, but on the other hand, an aggregate of the ninety-three ear cases which were not a result, and the one hundred ninety-eight throat cases which were not a cause, constituted three-fifths of the five hundred. In other words, in more than half the cases, the ear and throat affections were independent of each other.

Of all middle ear affections, acute inflammation has seemed most frequently, and so-called sclerosis least frequently, dependent upon diseases of the nose and throat.

The conclusions arrived at are as follows: (1) That while nasal diseases predispose to aural affections, there is less direct danger than is generally supposed.

(2) That excepting specific infections, the greatest danger is from diseases of the nasopharynx.

(3) That any of the ear affections accompanying nose and throat disease may be due to a general tendency, rather than a direct extension.

(4) That to successfully treat aural affections, it is a wise precaution to examine the nose and throat, and to correct as far as possible all pathological conditions.

HEADACHE FROM NONSUPPURATIVE INFLAMMATION OF THE ACCESSORY SINUSES OF THE NOSE.

CHARLES M. ROBERTSON (*Journal of the American Medical Association,* March 5, 1904) calls attention briefly to headache due to pressure in the accessory sinuses of the nose. This disturbance produces all the symptoms of empyema except the discharge. The author believes it is due to the obstruction of the natural orifice, and that it is not an uncommon condition. The imprisoned air loses its oxygen by absorption, and this causes swelling of the mucous lining of the sinus. The middle turbinal is the one often diseased. When opening to the sinus becomes patent the headache disappears.

THERAPEUTICS.

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THERAPEUTICS OF INSANITY.

ORPHEUS EVERTS, M. D. (*Journal of the American Medical Association,* April 16, 1904) describes the treatment of the insane as medical, hygiene and disciplinary. He says medical prescribing is done empirically. That for all time the insane have been treated on the principle of physiologic and medicinal antagonism without utilization of the suggestions of science, a course not in keeping with medical progress.

The benefits the insane have derived from science, he declares, are physiologic, hygienic and ethical and not medicinal.

He admits that mercurialization and excessive blood-letting have been done away with, but says that the extent to which sedative narcotics are now administered, more than counterbalance any benefits received from the nonuse of these earlier remedies.

The ease with which remedies of a sedative character may be administered hypodermically, and the promptness with which the effect follows are mentioned among the influences that tend to overpopularize the use of narcotic drugs in this class of cases.

Tonics may be useful at times provided no disturbance of digestion is created, and purgatives are frequently necessary. In fact regulation of the elimination function of the intestines is considered by Doctor Everts one of the most important duties devolving upon those who care for the insane. Electricity in competent hands may be of great value in the treatment of insanity.

Hygienic therapeutics involves the rational use of air, food, water, light, wamth and exercise.

Disciplinary therapeutics is second only to hygienic. Restraint is frequently necessary. In applying it the question of method has to be decided. Mechanical appliances, paralyzing medicines and moral influences are the agents from which choice is made. Moral influence is the most generally applicable.

Restraint by the hands is more irritating to the patient than by mechanical appliances. Medicinal restraint has, however, supplanted other forms to a great extent. "The outside world approves unquestionably of the transition. The outside world judges from superficial appearances, not from carefully observed and analyzed facts; the fact, for instance, that this transition from mechanical to other forms of restraint—especially the narcotic form—has been attended by marked diminution of the ratio of recoveries to the number of insane persons admitted to the hospitals of this country and Great Britain.'

PATHOLOGY.

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UEBER DAS CHLOROM.

KLEIN AND STEINHAUS (*Centralblatt für allgemeine Pathologie und pathologische Anatomie*, January, 1904) report the case of a patient, thirty-eight years of age, who had suffered for six weeks with pains in the right lower extremity, sternum and in some of the ribs. At the same time he developed weakness and anemia. Thickenings were found on the sternum and the ribs. The spleen was palpable, the prostate was found enlarged and there was a neuritis of the right sciatic. The weakness of the patient increased, the anemia became more pronounced, the pains did not abate, and double facial paralysis developed. After six weeks stay in the hospital the patient died. At the time of entrance the leukocytes were 20,000 but the number gradually rose to 41,000 before death. At first the lymphocytes were fifty per cent, of these ten per cent being large lymphocytes. Before death the lymphocytes were sixty-six per cent, of these forty-seven per cent being large lymphocytes. The proportion of myelocytes varied during the course of the affection between sixteen and thirty-two per cent. On autopsy green masses were found on the sternum both anteriorly and posteriorly, the right lung being compressed. Green nodules were also present on some of the ribs. Along the spinal column there were green masses adherent to the bones and infiltrating the muscles. Flat green masses were found on the cranial bones, small green nodules in the kidneys and a larger green nodule in the prostate. The bone-marrow of the sternum and ribs was red, that of the femurs partly red and partly green, very soft and almost fluid in consistency. The spleen was slightly enlarged, the lymph glands showed no pathological changes. The green masses gave a well-marked blue reaction with tincture of guaiac. Smears made from the green masses showed that instead of the expected lymphocytes the majority of the cells consisted of neutrophile myelocytes, the remaining cells being chiefly lymphocytes, in the bone-marrow smears there were also eosinophiles and red cells. The smears from the spleen showed almost exclusively mononuclear leukocytes. The microscopical study of the green masses showed that they consisted of myelocytes and polynuclear neutrophiles with a larger or smaller proportion of large lymphocytes. The sections of the bone-marrow presented the same picture with the addition of eosinophiles and red cells. No myelocytes were found in the lymph glands and spleen. As the result of such findings the authors are constrained to modify somewhat the existing views regarding the nature of chloroma. The question naturally arises whether in other cases of chloroma the green masses likewise did not consist of myelocytes. It is of course difficult to answer this question since the cases of chloroma already reported in the literature have not been similarly studied and many of them were reported before Ehrlich's time. Since no myelocytosis has been observed in any previous case, but a lymphocytosis only, the assumption seems justified that in those cases the green masses consisted exclusively of lymphocytes. The present case, however, proves the existence of a myelocyte or mixed-cell form of chloroma in addition to the supposed lymphocyte form. Chloroma, therefore, presents a varied blood picture just as in leukemia, and the different forms will present distinct blood and bone-marrow findings. It will be necessary, however, to prove the existence of an exclusively lymphocyte form as the statements made by previous writers cannot in the present light be accepted as absolutely conclusive. Lymphocyte chloroma is similar to the lymphocyte form of leukemia, while the myelocyte or mixed form is more sharply distinguished from the equivalent form of leukemia in its peculiar localization, and more malignant and rapid course. The discovery that chloroma of a myelocyte or mixed-cell form exists does, moreover, take chloroma out of the group of lymphosarcoma and places it in the leukemia group. Chloroma is therefore a form of leukemia distinguished by its localization, its greater aggressiveness, its tendency to infiltration and its rapid course, the green color playing a part of secondary importance.

A CASE OF CHLOROMA WITH CLINICAL HISTORY AND ACCOUNT OF POSTMORTEM APPEARANCES.

E. Trevithick (*The Lancet*, July, 1903) reports the case of a girl, aged thirteen years, who presented the clinical features of pallor, proptosis, broadening of the face due to hard swellings in the temporal regions, hard freely movable tumors in both breasts, periosteal nodes on the sternum and ribs, and subcutaneous hemorrhages. The patient complained of headache, pain in the neck, deafness, and blindness in left eye. Examination of the blood showed a great increase in the mononuclear forms with many degenerating cells. Cultures made from the blood were negative. The autopsy was performed twenty-four hours after death. Bright green tumors were found in the periosteum of the sternum, roofs of the orbits, temporal bones, and on the anterior surfaces of the ribs for a short distance outside of the costal cartilages. No green tissue was found along the anterior part of the spinal column in the thoracic region. The green tumors were firm and elastic, and for the greater part situated beneath the periosteum. They were easily separated from the bone. On cutting into the sternum the narrow spaces also contained minute collections of green material. Similar green masses were found between the dura mater and the inner surface of the skull cap. Thick green masses were present along the lumbar spine, being more marked on the left side. Several bright green glands were found behind the pancreas and at the roots of the lungs. Some of the cervical and axillary glands presented a similar change. The kidneys were enlarged and on section presented a most remarkable appearance. The subcapsular region was bright green in color while the medullary portions presented a considerable expanse of bright red tissue containing scattered bright-green islands. The green color in the kidneys faded quickly and in half an hour had changed to a dull drab. The liver was traversed by bright-green paths corresponding to the branches of Glisson's capsule. The pancreas showed several green islands. The right ovary was much enlarged and one section presented a uniform bright green color. The section of the left ovary showed similar appearances. Superficial green patches were found in the thyroid, and in the choroid plexus a soft bright green tumor of the size of a black currant was found. The lower portion of the uterus showed green coloration. A green semitranslucent clot was found in the right heart. The long bones were not examined. The lymphoid tissue of the gastrointestinal tract showed no evidences of involvement. The spleen was not notably enlarged and presented no evidences of pathological change. Microscopically the green tissue was found throughout to present the same structure, being composed of densely packed mononuclear cells resembling those seen in the blood. There was no evidence of vascularization or new-formation of reticulum. Wherever the green color was most prominent the mass of cells was greatest. Trevithick would regard the condition as due to an increase of mononuclear cells in the blood with emigration and infiltration of the tissues.

As to the place of origin of these cells he was unable to form a definite opinion but thought it probable that they might arise in the lymphatic glands inasmuch as near the hilum of these glands spaces showing great endothelial hyperplasia were seen. He rejects the view regarding chloroma as a sarcomatous new-growth because of the irregular disorderly disposition of the individual invading cells and the marked absence of any vascularization. The green color he believes to be in some way associated with the blue color sometimes seen in urine and sweat. In conclusion he thinks there must have been some poison in the circulation which stimulated a great overgrowth of certain tissue-units eventually leading by misplaced activity to the death of the host.

EDITORIAL COMMENT.

AMERICAN MEDICAL ASSOCIATION MEETING.

THE fifty-fifth annual meeting of the American Medical Association, which convened at Atlantic City, June 5, was the largest in the history of the organization, two thousand eight hundred ninety physicians having registered. Only two previous meetings succeeded in reaching the two thousand mark, namely, Atlantic City (two thousand nineteen) in 1900 and New Orleans (two thousand six) in 1903. The New York contingent, which has been estranged from the association for a number of years, augmented the meeting about two hundred fifty. This wing of the profession has been finally reconciled to the American Medical Association through the efforts of the president of the national organization in conjunction with the New York State Medical Association. The general sessions and the sections were well attended, and the scientific program, in the two divisions of medicine and surgery, was more elaborate than is usual.

* * *

The presidential address considered the problems and progress of the association, medical education receiving especial attention. The importance of a general liberal education as a preliminary groundwork for the study of medicine was particularly emphasized. There should be a uniform educational requirement equivalent to that exacted for a reputable college degree, which should be supplemented, after graduation, by hospital experience of a year's duration. Congratulations were offered on the progress already achieved, and the suggestion was advanced that sections organize special international congresses when time is ripe; while in the domain of sanitary science the position of the profession toward the public was interestingly discussed.

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In the medical section the early diagnosis and treatment of typhoid perforations elicited considerable discussion, and the consensus of opinion indicated that the diagnosis must not be made from the resultant peritonitis, but rather from symptoms incident to perforation.

Although operative procedure for this condition was advocated twenty years ago, little thought was entertained at the time that it would be the ideal treatment of today. The Philadelphian credited with suggesting the innovation now expresses the hope that operations for progressive hemorrhage may yet become vogue to the extent that operations for intestinal perforation have already attained. The oration on medicine, "Prognosis—Its Theory and Practice," delivered by Doctor George Dock, was replete with precious gems from a resourceful mind, and enlisted attention because of its practical application, ethical bearing, and novel departure. It will be published in the next issue of this journal.

* * *

The surgical section was especially interested in operations contemplating the upper abdominal region, and freely discussed surgery of the stomach, pancreas, gall-bladder, and enterosities. Notwithstanding the attention which this field of surgery received, the lower segments of the abdomen were accorded meed of discussion commensurate with the importance of ailments peculiar to the pelvic cavity. The title of the oration on surgery, delivered by Doctor William J. Mayo, was "The Association of Surgical Lesions in the Upper Abdomen."

* * *

The committee to which was entrusted the erection of the Rush monument reported that its work was completed and the association inaugurated a movement looking to the realization of a fund for a memorial to Doctor Walter Reed, whose investigations solved the problem of the eradication of yellow fever. Six thousand dollars were subscribed at this meeting, two hundred fifty dollars being contributed by Doctor Reed's brother officers, and five hundred dollars by the California State Medical Society. About forty physicians contributed from fifty to one hundred dollars each. Inasmuch as Doctor Reed's discovery has removed a great hindrance to commerce, the officers intend to solicit boards of commerce and trade for funds to aid the project. A Walter Reed Memorial Association has already been incorporated in the District of Columbia, of which Doctor D. C. Gilman, president of the Carnegie Institute, is president, and General C. DeWitt, of the United States Army, Washington, is secretary. It is proposed to raise twenty-five thousand dollars and give the income derived therefrom to the widow during her lifetime, after which a permanent memorial will be dedicated to Doctor Reed, the exact nature of which is not likely to be determined until the entire amount has been insured.

CONTEMPORARY.

ANESTHETICS IN CHILDREN.

[THE CINCINNATI LANCET-CLINIC.]

For many years the medical profession has labored under the idea that chloroform is the best anesthetic to give children, in that it is practically harmless and that the little people do not struggle so much in the initial stage as when ether is used. Until lately few, if any, have cared to take issue with this view, though many of us have undoubtedly felt that chloroform is not the harmless drug when administered to children that text-books would lead us to suppose. The writer, a few years ago, in an editorial commenting upon the collective investigation of deaths resulting from operations upon adenoid vegetations, called attention to the dangers of chloroform in these lymphatic patients, children for the most part with the general health far below par, needing but little of a depressing character to send them over the line. Recently, Iglauer, at the Cincinnati Academy of Medicine, and Bennett, have again called attention to this most important subject. The latter, indeed, states that deaths from anesthetics occur, relatively speaking, more often in childhood than in adult life, and is inclined to attribute this to the fact that ether is practically never used in anesthetizing children unless chloroform is, on account of some physical defect, absolutely contraindicated. There can be no question but that the crying and struggling which children exhibit during the progress of anesthesia interferes very materially with the smooth, gradual administration which is so essential for safety. The anesthetizer will almost invariably push the drug in a struggling child, give it too freely or too fast, and this overdosage, combined with great concentration of the vapor, is sure in not a few instances to be attended with disastrous results. When ether is given this irregularity of administration is not of such paramount importance. nor does the struggling of the child lessen its immediate safety to any great extent, as it surely does with chloroform; for it is to be remembered that circulatory depression, common under the latter drug, is comparatively rare with ether, and the increased struggling that might be caused by ether is more than offset by its stimulating properties. We believe that ether is not unsuitable as an anesthetic for children, and, mindful of the large number of fatalities that are being constantly reported from chloroform anesthesia, request for ether at least a fair trial.

MEDICAL NEWS.

THE GRAND RAPIDS MEDICAL MEETING.

THE thirty-ninth annual meeting of the Michigan State Medical Society was held at Grand Rapids, May 25, 26, and 27, 1904, under the presidency of Doctor William F. Breakey, of Ann Arbor. The literary program contained over sixty papers. The finance report showed that the receipts for the year were six thousand five hundred ninety-nine dollars and thirty-two cents and that the disbursements were five thousand two hundred ninety-eight dollars and forty-two cents, leaving a balance on hand of one thousand three hundred thirty-two dollars and ninety cents. Doctor Beverly Drake Harison, of Sault Ste. Marie, was elected president for the ensuing year. The next meeting will be held at Petoskey.

DOCTOR WILHELM HIS.

The demise, on May 1, 1904, of Doctor Wilhelm His, professor of anatomy at the University of Leipzig, has removed from the profession one of its foremost embryologists and anatomists, and depleted the ranks of noted German scientists. The doctor was born at Basle in 1831 and pursued his medical studies successively at Basle, Würzburg, Berne and Berlin, under the tutelage of such men as Virchow, Müller, Remak, Bernard and Brown-Sequard. At the age of twenty-six he was appointed to the professorship of anatomy and physiology at Berne, in which institution he remained until 1872, when he succeeded to the chair of anatomy and assumed the directorship of the anatomical laboratory at the University of Leipzig, remaining with the latter school until the time of his death. The doctor was an earnest worker in embroyology and much of our present knowledge regarding human embryologic anatomy is due to his researches.

NOMENCLATURE FOR PULMONARY TUBERCULOSIS.

Doctors Bowditch, Stubbert, Baldwin, Knight and Quimby, who constitute the committee on nomenclature appointed by the American Climatological Association, suggest the following classification for cases of pulmonary tuberculosis:

Incipient.—Slight physical and subjective signs, with history indicative of pulmonary tuberculosis. Sputa, if present, without bacilli. First Stage:—Definite physical signs of localized infiltration total involvement less than half a lobe, whether at one or more points; cough and expectoration with bacilli; constitutional symptoms slight. (In disseminated cases expectoration and bacilli may be absent with constitutional symptoms more severe.) Second Stage:—Infiltration of single or multiple areas approaching or equal in amount to one lobe; or smaller area in stage of softening; cough and expectoration with bacilli; constitutional symptoms, severe. Third Stage:—Infiltration in excess of one lobe, or if less in stage of well-developed excavation; more severe constitutional symptoms.

The committee likewise suggests, as a classification of results of treatment in pulmonary tuberculosis, the following:

Progressive.—All essential symptoms and signs continue unabated. Quiescent:—Constitutional symptoms slight or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli still present. Arrested:—Absence of all constitutional symptoms; expectoration and bacilli still present; physical signs may or may not persist; foregoing to have existed for at least three months. Apparently Cured:—All constitutional symptoms and expectoration with bacilli absent for a period of three months. Cured:—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

MINOR INTELLIGENCE.

OFFICIAL mortality statistics in India show that the enormous number of eight hundred forty-six thousand and thirty deaths resulted from plague during the year 1903.

THE trustees of Columbia University, at a meeting on March 7, decided to annex the College of Pharmacy of the City of New York as a part of the university system.

THE Secretary of War is considering the advisability of appropriating $400,000 for the purchase of land in the District of Columbia upon which to erect a general army hospital.

SAN FRANCISCO is to have a new German Hospital, which will be erected at a cost of four hundred thousand dollars. The structure will be six stories in height and will be fireproof throughout.

THE Board of Education of Chicago has appointed twelve physicians to act as medical inspectors of the public schools of that city. Each one will receive a salary of fifty dollars per month.

DOCTOR FREDERICK H. GERRISH, professor of anatomy at Bowdoin College, and author of the text-book which bears his name, recently received the honorary degree of LL.D. from the University of Michigan.

ON May 1, 1904, the American Medical Association had a membership of 15,039. This number was considerably augmented at the Atlantic City meeting. The Michigan State Medical Society recently reported a membership of 1,672.

AN epidemic of bubonic plague has again broken out in India. During the last week of March over forty thousand persons succumbed to the malady, which was an increase of seven thousand over the death rate of the preceding week.

THE New Orleans Charity Hospital has recently enlarged its field of usefulness by establishing a Pasteur Institute in connection with its other wards. Free treatment will be tendered to persons residing in Louisiana, Alabama and Mississippi.

TEXAS is to have a Pasteur Institute which will be operated in connection with the State Lunatic Asylum at Austin. The legislature recently made an appropriation of five thousand dollars for the establishment and maintenance of the annex.

THE unusual prevalence of cerebrospinal meningitis in the city of New York is causing the people to fear the recurrence of an epidemic similar to the one of several years ago. Thus far four hundred deaths have been reported to the Board of Health.

THE Esquimaux in the vicinity of the Mackenzie basin have suffered so severely from an epidemic of measles, which recently prevailed in that region, that all but ten families have succumbed. Before the appearance of the disease the settlement was inhabited by about forty or fifty Esquimaux families.

HONORARY degrees were conferred on the following physicians at the recent graduation exercises of the University of Pennsylvania: LL.D.—Sir Frederick Treves, of England; Doctor Howard P. Bowditch, of Harvard University; Doctor Horatio C. Wood, of Pennsylvania University. D. Sc.—Doctor George Dock, of the University of Michigan.

THE meeting of the International Tuberculosis Congress, which was held recently in Parliament House, Copenhagen, was characterized by the presence of several notable personages, among whom were Crown Prince Frederick and United States Minister Swenson. Delegates were in attendance from twenty countries. The president of the congress was Professor Brouardel, of Paris.

THE Home for Incurables, of New York, was recently the recipient of twenty-five thousand dollars from Miss Emily A. Watson, donated to erect a four-story fire-proof structure, to be known as Nurses' Hall. Besides quarters for the men nurses, it is expected that rooms for twenty-five patients can be provided within its walls. It is planned to have the building ready for occupancy by October.

A NEGRO in New Haven, Connecticut, is said to have lived for twenty years with a portion of knife blade in his brain. The condition was the result of a quarrel in which the subject sustained a stab in the head, the blade breaking off after penetrating an inch. No mental symptoms were experienced until recently, when convulsions lead the sufferer to seek medical aid. The blade was removed without evil effect.

THE annual meeting of the American Academy of Medicine was held at Atlantic City, June 6 and 8, when the following officers were elected: President, Doctor W. S. Hall, of Chicago; vicepresidents, Doctors H. B. Ellis, of Los Angeles; R. A. Reeve, of Toronto; L. S. McMurtry, of Louisville, and M. H. Richardson, of Boston; secretary, Doctor Charles McIntyre, of Easton; treasurer, Doctor E. M. Green, of Easton.

THE following officers were elected at the twenty-eighth annual meeting of the American Dermatological Association, which was held at Niagara Falls, June 2 and 3, 1904: President, Doctor W. T. Corlett, of Cleveland; vicepresident, Doctor F. H. Montgomery, of Chicago; secretary-treasurer, Doctor Charles J. White, of Boston. The next meeting of the society will be held in New York, December 28, 29 and 30, 1905.

THE annual meeting of the Sioux Valley Medical Association, which was held at Sioux Falls, South Dakota, was an instructive and enjoyable session. The following officers were elected for the ensuing year: President, Doctor M. Sullivan, of Adrian, Minnesota; first viçepresident, Doctor A. E. Cook, of Randolph, Nebraska; second vicepresident, Doctor R. E. Woodworth, of Sioux Falls, South Dakota; secretary, Doctor M. E. Silver, of Sioux City, Iowa; treasurer, Doctor S. A. Brown, of Sioux Falls, South Dakota.

A CASE of supernumerary ribs is reported from Philadelphia. The extra structures were found in the cervical region, one on either side, and articulated with the seventh cervical vertebra. The subclavian artery passed over the right one, which was the larger, extending inward toward the median line as far as the middle of the clavicle. The condition is rare.

THE Wayne County Medical Society elected the following officers at its annual meeting in Detroit, on May 19: President, Doctor Guy L. Kiefer; vicepresident, Doctor Willis S. Anderson; secretary-treasurer, Doctor William J. Stapleton, Junior; board of directors—Doctors Johann Flintermann, Howard W. Longyear, Frederick W. Mann, William F. Metcalf and Frank B. Tibbals.

ACCORDING to statistics it would seem that syphilis is an important factor in the causation of appendicitis. Of twenty-three cases of the disorder observed by Gaucher, twenty-one were unquestionably syphilitic. The patients were all under thirty years of age. Of thirty-two cases (all ages) observed by the same investigator, eight had acquired syphilis and twenty-one were victims of hereditary syphilis.

Two hundred thousand dollars were bequeathed by the late Mrs. Henry Whitman, of Boston, for charitable purposes. The hospitals which received bequests are: Children's Hospital, Boston, ten thousand dollars; the Home for Incurables, Boston, five thousand dollars; Massachusetts Infant Asylum, five thousand dollars. Twenty thousand dollars were also given to the Society for the Relief of Crippled and Deformed Children.

THE Union des Syndicate Medicaux de France is the principal promoter of a congress which will convene in France within a year to inaugurate a movement looking toward the suppression of quackery. The discussions will not only be open to physicians, but to lawyers, journalists, legislators, and magistrates as well. Illegal medical practice, and the unlawful newspaper advertisements of patent medicines, will be the chief objects of attack.

DOCTOR SIMEON BELL has donated four hundred forty acres of land to the State University of Kansas, from the sale receipts of which it is proposed to erect a hospital in connection with the medical college of that institution. The structure is estimated to cost, approximately, twenty-five thousand dollars. If this sum is not realized from the sale of the land, the doctor has agreed to supply the deficit. The hospital will be erected as a memorial to the wife of Doctor Bell.

THE next International Medical Congress will be held in Lisbon, Portugal, April 19 to 26, 1906. The congress is divided into seventeen sections, which include anatomy, physiology, general pathology, and bacteriology, therapeutics and pharmacology, medicine, pediatrics, neurology, dermatology, surgery, urinary medicine and surgery, ophthalmology, laryngology, obstetrics and gynecology, hygiene, military medicine, legal medicine and colonial and naval medicine.

THE PanAmerican Medical Congress, which meets every three years, will convene in Panama sometime during the month of December, 1904. The congress first met at Washington, District of Columbia, in September, 1893, and has held meetings since in Mexico (1896) and Cuba (1901), the later meeting having been scheduled for Venezuela in 1899, but was postponed on account of the war in that country.

THAT the profession of medicine has an attraction for women in Europe is evidenced by the fact that during the past year the women students persuing medical studies in Swiss universities outnumbered the men, the proportion being 891 to 763. Three hundred seventy-seven women were enrolled in the College of Medicine at Berne; one hundred eighty-one at Lausanne; one hundred seventy-seven at Zurich; one hundred fifty-one at Geneva; and five at Basle.

STATISTICS recently compiled in Germany show that suicide in that country is increasing to an alarming degree. In 1900 twenty of every one hundred thousand persons were guilty of self-murder. In 1901 the proportion had advanced to 20.8, and 1902, the death rate of Berlin showed that 31 of every one hundred thousand persons were guilty of self-destruction. Hamburg, however, suffers more deaths from suicide than any other German city, the proportion there being 37 to every one hundred thousand of the population.

THE Boston Society for the Relief and Control of Tuberculosis recently sent a communication to the Building Trades Council of that city, but the latter refused to notice the missive because the union label was not in evidence thereon. Such behavior toward a philanthropic body, striving for and seeking assistance for the regeneration of the community, is, to say the least, decidedly obnoxious unionism, inasmuch as it has since transpired that the letter-heads of one or more of the unions interested do not bear the union label.

PLANS have been prepared for the addition of three public baths to the bath system of New York. The new buildings will be a vast improvement in construction and arrangement over any similar structures in the country. The baths now in operation are well patronized and are working a great amount of good in New York City, as it is estimated that nearly two million bathers can be accommodated yearly. At one bath in the borough of Brooklyn between fifteen and eighteen hundred people take advantage of the water each day.

THE annual meeting of the Indiana State Medical Association was held at Indianapolis, May 19 and 20, 1904, with a somewhat larger attendance than is usual. The following officers were elected for the ensuing year: President, Doctor George T. McCoy, Columbus; first vicepresident, Doctor Homer J. Hall, Franklin; second vicepresident, Doctor Claude T. Hendershot, Cannelton; third vicepresident, Doctor David J. Loring, Valparaiso; secretary, Doctor F. C. Heath, Indianapolis; treasurer, Doctor Albert E. Bulson, Junior, Fort Wayne.

THE American Pediatric Society, which held its annual meeting in Detroit May 30-31 and June 1, 1904, elected the following officers: President, Doctor Charles G. Jennings, of Detroit; first vicepresident, Doctor Charles G. Kerley, of New York City; second vicepresident, Doctor Thompson S. Westcott, of Philadelphia; secretary, Doctor Samuel S. Adams, of Washington; treasurer, Doctor Linnaeus E. Le Fetra. Lake George has been selected as the place for the next meeting, which will be held June 19, 20 and 21, 1905.

THE Fort Wayne College of Medicine has affiliated with the Northern Ohio University located at Ada, Ohio, and will henceforth be known as the medical department of that institution, though it will continue under its incorporate name. It is thought that eventually the first two years of the medical course will be given at the university in Ada and the last two years at the college in Fort Wayne, thus placing the advantages of a combined literary and medical course of six years at the option of the student, who will be afforded excellent clinical facilities.

INVESTIGATIONS disclose the fact that during the past fourteen years fifty-six per cent of the deaths occurring in German reformatories have resulted from pulmonary tuberculosis. The superintendents of a few American penitentiaries have inaugurated a crusade against the disease, the affected convicts being separated from the others and as many as possible allowed to work in the sunlight. A marked indifference evidently exists in the average prison regarding the health of the inmates, and it would seem that the above statistics necessitate better sanitary conditions.

THE Ontario Medical Association held its twenty-fourth annual meeting at Toronto, June 14, 15 and 16, 1904. A number of interesting and instructive papers were read and the meeting was pronounced a success. The following officers were elected for the ensuing year: President, Doctor William Burt, Paris; first vicepresident, Doctor J. L. Davison, Toronto; second vicepresident, Doctor George Hodge, London; third vicepresident, Doctor Edward Ryan, Kingston; fourth vicepresident, Doctor F. H. Middleboro, Owen Sound; general secretary, Doctor P. Lusk, Toronto; assistant secretary, Doctor Samuel Johnston, Toronto; treasurer, Doctor Frederick Fenton, Toronto.

THE Florida Medical Association which recently convened at Live Oak, elected the following officers for the ensuing year: President, Doctor Edward N. Liell, Jacksonville; vicepresidents, Doctors J. M. Jackson, Miami, J. F. McKinstry, Gainesville, and J. S. Holmes, Tampa; secretary-treasurer, Doctor J. D. Fernandez, Jacksonville. An amendment to the constitution was presented making Jacksonville the permanent meeting place, and a resolution was adopted advocating a State Board of Medical Examiners. The Florida legislature will be asked to enact a law requiring a uniform system of registration of vital statistics. Doctor J. H. Claiborne, Junior, of New York City, contributed a paper on the "Treatment of Trachoma."

THE large percentage of white wings in the city of New York who are said to be affected with tuberculosis, contracted by breathing the impure dust of the city streets, has caused the Health Board to take precautionary measures against further spread of the disease. The men are now required to bathe before going to their homes, and to daily boil their duck uniforms in order that the germs may not be carried in them. The city is considering the advisability of employing disinfectants in the street sprinkling wagons.

THE American Medical Association recently elected the following officers at the Atlantic City meeting: President, Doctor Lewis S. McMurtry, of Louisville; first vicepresident, Doctor Edward Jackson, of Denver; second vicepresident, Doctor James Hall Bell, of San Antonia; third vicepresident, Doctor Frederick C. Shattuck, of Boston; fourth vicepresident, Doctor Byron C. Pennington, of Atlantic City; secretary, Doctor George H. Simmons, of Chicago; treasurer, Doctor Frank Billings, of Chicago. The next meeting will be held in Portland, Oregon.

THE United States leads the world in the number of physicians, one hundred thirty-five thousand, while Russia, with a larger population, can boast of only twelve thousand five hundred. In England forty-two thousand are pursuing the healing art, while the profession in France and Germany numbers sixty thousand and twenty-seven thousand respectively. The United States and Canada have one medical college to every five hundred thousand population, and of the large powers, Austria, with one college for every five million of people, has the lowest number of schools.

A SUIT recently brought against a physician and a druggist in a French court to determine responsibility for death from poison, resulted in conviction of the physician and acquittal of the druggist, the verdict imposing a fine of forty dollars and costs upon the medical attendant. An injection of a one to fifty solution of cocain was administered to a child, instead of a one to five hundred solution as the physician had ordered, but the court held that the physician was guilty because he did not verify the strength of the drug, and entrusted the injection to an ordinary nurse instead of a trained assistant. The injustice of the case is apparent.

PARIS has a new medical research laboratory which was opened on March 21, and is conducted under the direction of the Faculty of Medicine. The city donated the ground and the Faculty of Medicine defrayed the cost of the building and its equipment, with the exception of a considerable amount that was subscribed by other persons interested. The laboratory is built within the line of the old fortifications of Paris, and is intended especially for animal experimentation, every precaution having been observed to insure maintenance of the animals under the best hygienic conditions. The opening ceremony was brief, Professor Charles Richet acting as spokesman for the Faculty.

THE annual fees of the medical department of Columbia University have been increased from two hundred to two hundred fifty dollars. In consequence of the advance ninety-eight of the students attending the school have decided to complete their medical studies elsewhere. A meeting of protest was held immediately following the announcement of the increase, the result of which was the sending of a petition to each member of the board of trustees setting forth the fact that inasmuch as the students had entered with the understanding that the fee was to be two hundred dollars a year, they were being subjected to manifest injustice. The board decided not to make any concession.

THE medical and dental professions of Chicago have agreed that all questions of legislation and larger public policy relating to the affairs of the two professions shall be referred to a committee which has been designated the Committee on Public Relations, and consists of ten members, five being from each profession. There will be an annual meeting of the committee for the purpose of electing a chairman and a secretary, and thereby effecting a continuance of its organization. Special meetings may be called from time to time by the chairman or by any two members. Any question of public policy or public relation affecting either the medical or dental profession, or of legislation affecting directly or indirectly either of them, can be referred to this committee and it will be the duty of the committee to carefully consider the matter. It will also have the power to recommend either specific action or general attitude to the societies from which the members come as delegates.

THE Association of State Medical Examining and Licensing Boards held its fourteenth annual meeting at Atlantic City, June 6, the president, Doctor Henry Beates, of Philadelphia, in the chair. The annual address was delivered by the president; "What Constitutes the Practice of Medicine in New Jersey," was discussed by Doctor John W. Bennett, of Long Branch; the chairman of the Committee on Curriculum and Preliminary Requirements, Doctor George W. Webster, of Chicago, presented a report on "Courses of Study;" "A Model Registration Act" was presented by Doctor Seymour D. Van Meter, of Denver; and "The Relation of Licensing Boards and Colleges to the Work of Organization," was discussed by Doctor Joseph N. McCormack, of Bowling Green, Kentucky, in the absence of his father, who prepared the paper. Officers for the ensuing year were elected as follows: President, Doctor Henry Beates, Junior, of Philadelphia; first vicepresident, Doctor A. Walter Suiter, of Herkimer, New York; second vicepresident, Doctor George W. Webster, of Chicago. Executive Council: Doctors William S. Foster (Chairman), of Pittsburg; Joseph M. Mathews, of Louisville; William A. Spurgeon, of Muncie, Indiana; William W. Potter, of Buffalo; and Augustus Korndoerfer, of Philadelphia. Committee on Curriculum and Preliminary Requirements: Doctors George W. Webster (Chairman), Augustus Korndoerfer, William H. Halbert, William S. Ely, and Edwin B. Harvey.

RECENT LITERATURE.

REVIEWS.

INTERNATIONAL CLINICS.*

THIS volume not only keeps up the high standard of practical and suggestive medical literature set by the energetic editor, but furnishes an embarrassment of riches for the reviewer. We find in the first place one hundred and twenty pages on "Diseases of the Gall-Bladder and Gall-Ducts," by J. H. Musser, C. G. Stockton, R. D. Rudolph, F. Parkes Weber, F. Lejars and John B. Deaver, the names of the authors being a guarantee of good clinical work and clear description. An article on the "Treatment of Pneumonia," by David W. Finley, adds nothing new, and perhaps is rather too brief in some details, but gives sound doctrine in many others often overlooked in practice, and one on "Clinical Types of Pneumonia," by R. Murray Leslie, is especially valuable in showing, by good examples, the great variety of type in pneumonia and the departures from the rule of many single symptoms. It is certain that much of the ephemeral treatment of pneumonia of the present time is due chiefly to lack of appreciation of these things. "The Medical Treatment of Gastric Cancer," by A. Robin, appals by some of the strange drugs advised, but there is very much of value in the article, not the least being the advice as to surgical intervention. A. Chantemesse encourages the use of antityphoid serum in addition to the bath, in the "Treatment of Typhoid Fever," claiming a reduction of mortality of from twelve to thirteen per cent (in Paris the typhoid fever has been of a severe type in the last few years) to four or five per cent. Out of three hundred fifty-six cases, Chantemesse lost seventeen. The serum does not lessen the tendency to perforation, in patients coming under treatment at the usual time, but the author mentions an experience at the Naval hospital at Toulon where the patients are admitted early, and where one hundred fifty-one cases were treated with serum with only one perforation. Charles F. Craig has a most excellent article on "Malarial Infections; their Parasitology, Symptomatology, Diagnosis, and Treatment," well illustrated. Among other medical articles may be mentioned those of Thomas J. Mays, on "Sudden Death Due to Respiratory Disorders," "A Form of Luekemia Intermediate between the Lymphatic and Splenomedullary Form," by J. S. Fowler, and "Clinical Evidence of Myocardial Damage in Rheumatic Fever," by F. J. Poynton. Surgery is represented by articles on "Cocaine Anesthesia," and "Operation for Varicocele," by J. C. Bodine; "General Anesthesia," by John A. Lewis; "Asepsis and Antisepsis," by Lucas-Championnière; "Gastrostomy, and Concussion of the Brain," by William L. Rodman; "Intrascrotal Tumors," by William T. Belfield, and the "Modern Treatment of Varicose Veins," by C. E. Schwartz.

Altogether, the series is one of the most valuable works for the busy practitioner and the advanced student, and as a specimen of bookmaking it leaves nothing to be desired. G. D.

*A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by A. O. J. Kelly, A. M., M. D. Philadelphia: J. B. Lippincott Company, 1903.

GENERAL PATHOLOGY.*

THAT Doctor Ziegler's "General Pathology" is popular and thoroughly appreciated by the medical profession is shown by its having reached its tenth edition. Books of this nature are sought after only by those who know the importance of this department of medical knowledge. It may therefore be truthfully said that the popularity the text-book has attained is wholesome.

It seems almost superfluous to comment upon the merits of this book, since so many words of praise have been given by others, and it would be a difficult task to review it. It must be said, however, that in spite of the numerous and well-known criticisms and attacks upon the author's presentation of inflammation, and his opposition to the parasitic nature of true tumors, he has not changed his opinion, but rather considers that these attacks have strengthened his point of view. He states that "infection is indeed very frequently advanced as a cause of tumors, but such etiology has not in any case been demonstrated beyond doubt;" that "it cannot be doubted that the etiology of tumors is not always the same;" and that "it is difficult to say what is the nature of the influence which excites the cells to production of an atypical tissue." "In the attempt to explain this phenomenon many writers have sought to recognize as the cause the presence of parasites; but our present knowledge does not justify us in attributing the development of true tumors" * * * "to the influence of parasites." The author then speaks of the well-founded evidence against this theory.

The parasitic cause of cancer receives an upper cut, and by a perusal of this chapter it is not hard to see how the mighty have fallen. The above are live subjects, about which too much cannot be known. Eager in the pursuit of true knowledge, Ziegler maintains a conservative view throughout his entire work, which in itself cannot fail to win for it greater prestige as it becomes known to new readers.

The chapters devoted to the description of bacteria and their relation to disease are unexcelled. Indeed the volume may be considered an encyclopedia of the entire field of general pathological knowledge to date. All the newer achievements resultant upon Ehrlich's side-chain theory receives an especially comprehensive consideration.

The translation is by one whose fruitful knowledge and research in pathological science has become world-wide. The value of such a translation is apparent.

*By Ernest Ziegler, Professor of Pathological Anatomy and of General Pathology in the University of Freiburg in Breesgaer. Translated from the revised tenth German edition by Aldred Scott Warthin, Professor of Pathology and Director of the Pathological Laboratory in the University of Michigan. William Wood & Company, New York.

A SYSTEM OF PRACTICAL SURGERY.*

THIS is without doubt the most important work on surgery that has recently appeared. The names of the original authors stand at the head of the list of foreign surgeons and the name of the American editor is a sufficient guarantee that the work has been carefully prepared. Many illustrations have been added to the translation, thus increasing its value over the original work. The present volume covers the following subjects: "Injuries and Diseases of the Skull and its Contents," "Malformations, Injuries and Diseases of the Ear," "Malformations and Injuries of the Face and Plastic Operations," "Neuralgias of the Head," "Anomalies, Injuries and Diseases of the Salivary Glands," "Injuries and Diseases of the Jaws," "Malformations, Injuries and Surgical Diseases of the Nose and Adjacent Tissues," "Malformations, Injuries and Diseases of the Mouth," "Malformations, Injuries and Diseases of the Pharynx." Because of its practical value, it should be frequently consulted by the student and general practitioner. No surgeon can afford to be without it. C. G. D.

*In five volumes. By Doctors E. von Bergmann, of Berlin, P. von Bruns, of Tübingin, and J. von Mikulicz, of Breslau. The American is edited by William T. Bull, M. D., Professor of Surgery in the College of Physicians and Surgeons, New York, and published by Lea Brothers & Company. Per volume: Cloth, $6; leather, $7; half-morocco, $8.50. Sold only by subscription. The first volume is now ready for delivery.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS.*

THIS volume is an improvement upon the corresponding one of the previous years. The abstracts cover a wider range, are much more to the point, and the references are more complete and more accurate. The index of authors is also an advantage. Nearly half of the volume is devoted to pathology, and the majority of the abstracts given under this head deal chiefly with pathological chemistry or parasitology. Some of the very valuable contributions to pathological anatomy and histology appearing during the year are accorded little or no attention. The dictionary of new words is far from being complete. The volume contains, nevertheless, so much useful information of the past year's work and progress as to be of great service to the busy practitioner who cannot avail himself of the original articles.

*Volume IX: Physiology, Pathology, Bacteriology, Anatomy, Dictionary. Pathology and Anatomy—edited by W. A. Evans, M. S., M. D.; Physiology, Bacteriology and Hygiene—edited by Adolph Gehrmann, M. D.; Dictionary of New Words—edited by William Healy, A. B., M. D. Chicago: The Year Book Publishers. August, 1903. 233 pages. Price, $1.25.

CLINICAL PATHOLOGY OF THE BLOOD: A TREATISE ON THE GENERAL PRINCIPLES AND SPECIAL APPLICATIONS OF HEMATOLOGY.*

EWING'S book on the blood quickly secured a place for itself by reason of its logical arrangement, its fullness of topics and of detail, the happy proportions of space chosen for the various subjects and the well-arranged and wisely-selected bibliographies. The present edition will doubtless make many new friends and prove a valuable aid in the advance of hematological study. But while the book deserves the highest praise and the greatest success, some minor blemishes may be pointed out, more especially because some of them might have been corrected in the present edition. One of the weak points is the failure to mention and recommend in its proper place one of the several valuable hematoxylon stains, combined with an acid stain. In fact, from one of the statements, the author seems to suggest that hematoxylon is an aniline dye. It is rather misleading to describe Ehrlich's myelocyte as a "medium sized cell" (page 125), and if it seems necessary to perpetuate the use of Cornil's name in connection with a narrow cell (page 125) it would be well to describe the characteristics more fully than has been done. The extremely faulty proof-reading of proper names is especially striking because the mechanical execution of the book is in general so superior. From the criticisms made it is easy to perceive that the faults of the book are few. Its good points will be quickly appreciated by all who use it, and to all who need a work on blood it is warmly recommended.

*By James Ewing, A. M., M D. Second edition, revised and enlarged. Lea Brothers & Company, New York and Philadelphia, 1903.

BACTERIOLOGY.*

THE author's aim has been to furnish the student and general practitioner with a book on "Bacteriology" from which "all unnecessary scientific discussions have been excluded." As neither bacteriology nor any other of the medical sciences is a finished science such an aim is pernicious in its effects upon the minds of students, and for this reason every book of this kind should be condemned and kept from the hands of students. The tendency of American publishers to multiply manuals and pocket text-books should be discouraged, otherwise we shall be having vest-pocket text-books containing all that is "essential" and "practical" in the science of medicine.

*A Manual for Students and Practitioners. By Fred C. Zapffe, M. D., Professor of Pathology in the Illinois Medical College; Professor of Histology in the Department of Medicine and in the School of Dentistry of the University of Illinois, Chicago. Lea's Series of Pocket Text-Books. Edited by B. B. Gallaudet, M. D. 350 pages, 146 engravings and 7 colored plates. Lea Brothers & Company, Philadelphia and New York.

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ORIGINAL ARTICLES.

MEMOIRS.

THE RELATION OF THE CATHOLIC CHURCH TO MEDICINE.*

BY VERY REVEREND FRANK A. O'BRIEN, A. M., LL.D., KALAMAZOO, MICHIGAN.
DEAN OF THE DIOCESE OF DETROIT.

PHYSICIANS nowadays, do not feel the need of familiarizing themselves with principles of theology, which have a bearing upon their profession, at least, not as much as priests feel on their part, the necessity of obtaining the amount of medical knowledge required by them. The need nevertheless exists, as far as the church is concerned. Physicians who lack the knowledge of certain positive teachings of that church, may do violence to their own conscience, or that of their patients. Students of medicine have very little time for the study of theology, and less opportunity.

Lectures on medical jurisprudence are delivered to students of law, and medicine, enabling both the lawyer and physician to gain the necessary information, about a science, which is otherwise foreign to each respectively. In like manner lectures on the church's attitude towards medicine, in my opinion, would be of great benefit to physicians. The more so, as questions at issue cannot be clearly demonstrated without the knowledge of theology and medicine.

Time will not permit us to go systematically over all the ground desired, in a discourse in popular form. This paper will set before you in a dogmatic way, such information as we think necessary for the views we hold. To be a physician, either for the body or soul, requires more than prescriptions, or attempts at conversion. All are fond of speaking of medical subjects. Health, next to life, is the greatest of possessions, and it is only natural that every man should take an interest in whatever concerns health, but to judge of medical matters, without sufficient study, is quite unpardonable in men of education. If their shoes require mending, they will not attempt the job, but they are quite willing to discuss any bodily disorder and discourage the use of medicine, thereby promoting quacks and humbugs. We state this at the outset to emphasize that the Catholic Church stands against this procedure. It believes and teaches that prevention is better than cure; it teaches that physicians are bound to give that counsel which is best suited to preserve their patient's health and life. The body of man is superior to all other subjects of physical science. The duty of the preserver of such a subject, is so noble, that it should be the highest aim of the greatest men. Making money is not the end.

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*Given by invitation before the Students of the Medical Department of the University of Michigan, Wednesday, April 27, 1904, in the New Medical Building.

The physician should be a benefactor to mankind. Knowledge alone will not make him a benefactor, unless his conduct in the management of his resources be directed to the real welfare of his patients. The church holds that a man is only held responsible for acts that he does of his own free will. The absence of this free will releases him from the obligations ordinarily contracted. A physician is not responsible to God or man for the evil consequences of a prescription, or operation, beyond his will. If, however, his mistakes arise from ignorance, he is blamable, in, and for as much, as he is the wilful cause of such ignorance. Or, in other words, persons who cannot qualify themselves properly for the work expected of them, should never undertake it, and the church holds that they are guilty of sin, if they attempt it. Accidental causes are not wilful. According to the teachings of the church, a medical student is in duty bound (1) to acquire sufficient knowledge, (2) to use reasonable care, (3) not to undertake an unusually difficult case without a consciousness of his ability, and (4) in case of doubt, he is obliged to consult with such as know at least as much as himself.

The church holds, that many acts, excused by human law, are criminal. Students may make use of bug, bird or beast for experiment, but they are forbidden to make use of man for the same purpose. Every man has a right to his life. The equality with which he is endowed by the Creator, and which is guaranteed by the Constitution of this country, must ever be respected, for "every man has a right to his life and liberty in the pursuit of happiness." The right that a man has of his life, all others are bound to respect. Neither can a man take his own life, for a true man must hold to his post, as long as his Commander requires it. Neither can a man shorten his life, nor has a physician a right to end life, or shorten it, even when the disease is incurable. The exceptions to these undeniable rights are as follows: (1) Self-defense, (2) capital punishment, and (3) our right to defend ourselves against an unjust aggressor. The church forbids craniotomy, for in no sense does the unborn child come under any of the above exceptions. It holds that the life of the child is as sacred as that of the mother, and therefore never to be wilfully sacrificed. Abortion is also forbidden. The rational soul is infused in the embryo at the very moment of conception, therefore, can never wilfully be destroyed. A good physician should be the father of his patients, and instruct the persons concerned, on dangers to be avoided. The church teaches that when a physician acts with due prudence, and for some unforseen cause, miscarriage follows, that he is not guilty of murder, but that if he forsees that it may result from his treatment, he is guilty as "the cause." The church never permits the killing of the unborn.

The church looks with disfavor on the use of cocain, chloroform, morphin and remedies of this sort. It holds that physicians have the duty of warning their patients of the dangers of venereal excesses. The social evil is rigorously condemned. The Ten Commandments should be the foundation of all training, and the authority of God explained, so as to check sinful actions, prurient curiosity, improper reading, pictures, looks, and whatever else that paves the way of the walks of sin, and hinders the great work of prevention, and the cure of excesses.

The church takes a great part in this noble work, of prevention and cure, by its instructions, the means of the confessional, and urging on its subjects the reception of the sacraments. A physician treating Catholic patients, will find it greatly to the benefit of such, to urge upon them the necessity of frequently approaching the sacraments. To keep human frailty as far as possible from youth, and where this is not possible, the plainly setting before youth, the wickedness and misery of excesses, will help to control lust. Hence the reason of the church insisting on inculcating a moral training. Great benefits come to every man and woman from the firm control that they acquire over their passions. Observing the Commandments pays, in this world, as well as in the next. It may be your lot to be an attending physician in a monastery or convent. You will then appreciate the delicacy of the flowers of virtue that bloom beneath the shadows of the sanctuary, as you never experience elsewhere.

Physicians can never prescribe illicit acts, even if such should save life. The end can never justify the means. If husband and wife do their conscientious duty, there is a God who will provide for them.

Physicians should be careful not to cause a false or exaggerated alarm, in regard to the dangers of childbirth, thus making themselves responsible for untold moral evils.

Physicians should show the greatest regard for the laws of morality. Their views, manifested in conduct and conversation, especially in cases involving the application of moral principles, will go far towards influencing in the right way the community in which they live.

The church lays the obligation on the physician of not only having sufficient knowledge on the day of his graduation, to accept the responsibility, but it makes study a duty, and obliges him to keep posted, and abreast of the times. He must be attentive to his patients. He has no right to expose his patients to needless danger. Moralists teach that a man is not obliged to submit to an extraordinary, painful or revolting operation. The physician is obliged to keep the secrets of his patients.

Parents and guardians, however, are usually entitled to be informed of the wrong doings of their children and wards.

The poor must not be neglected. Where there are such, the church obliges a physician to render his services, gratis. It also commands that proper respect must be shown to the mortal remains of a departed brother. Hence any wanton act of indignity to the human body in the dissecting room, is sinful. The church obliges physicians to inform patients of the real danger of death where it exists. Dying Catholics should have all the chance they want to get ready for eternity. Physicians who attend such patients will soon find out that the consolation of the last sacraments usually gives a peace of mind that brings bodily comfort. It is forbidden to administer to a Catholic such anesthetics as will render the patient unconscious at a time when he should be preparing to meet his great Judge. If a priest finds patients of one, or the other physician, in this condition, according to his teachings, he is obliged to protest against the employment of such physician.

You may be asked by a Christian mother, not to permit her child to die without baptism. Our belief is, that without baptism there is no salvation. The ceremony can be easily performed, and no possible harm can come from it. If capable Catholics are not present, anyone, even a pagan, Jew or infidel can administer this sacrament, provided he has the intention of doing what is required of him. It would be a disgrace for a learned gentleman to be ignorant of what every Catholic child knows. The simple ceremony required was instituted by Christ. No man dare modify it. Please take note of every detail, as this is the great essential, which the church emphasizes.

Take common water (cold, warm or lukewarm), pour it slowly on the head of the child. While you do so, say distinctly: "I baptize thee in the name of the Father, and of the Son, and of the Holy Ghost." You must say these words while the water is being poured. If your memory fails you, consult the catechism, or prayer book, which you will find in every Catholic house, or the Twentieth Century Dictionary. Remember you must have the intention of conferring the sacrament.

If it should happen that the child is in danger of death before its delivery, it should be baptized in the womb, provided it is at all possible, to cause the water to wash the body. The water may be projected upon it by any instrument you may make use of. The water must flow on the body, not merely over the cyst. It may be on a foot, or arm, or any portion of the body, provided, that that portion is washed. Then in all probability the baptism is valid. If there is any doubt about the baptism, the child can be baptized conditionally after birth.

By conditional baptism is meant, that you have no intention of giving a second baptism, as this sacrament cannot be repeated, but that you have the intention of baptizing, if the first baptism was invalid.

Should a physician be present when a pregnant woman expires, he should perform the Caesarean section, as soon as possible, so that he may baptize the little one before it dies.

It is a pleasure for me to say that many non-Catholic physicians carefully comply with these instructions, and kindly instruct midwives, and nurses in the way of rendering such services.

Self-respect should ever make a physician careful in thought, word and deed. His respect for others should make them feel comfortable in his presence. Not the bold thinker or the extensive reader, but the gentlemanly consoler, is the acceptable visitor in the sick-room. "Gentleness will thrive, where genius will starve," can be especially applied to a physician. Prolonged visits usually bring lack of confidence and respect.

I would advise you to be open, frank and courteous with priests, avoiding familiarity. You will find them able helpers in removing prejudices and reforming abuses. The church does not desire a priest to perform the duties of a physician. The extensive medical information received in their training, is to be used only in connection with the moral side of the case. While many may have the ability to practice medicine, the church will not permit it, where physicians are available. Their vocation is to instruct the people, to make them realize their duty towards themselves, their fellow-beings and their God, and to oppose in every way in their power, all quackeries and superstition, be they either in the physical or moral order.

Catholics are instructed that they are obliged in conscience to apply to a competent physician in time, to obey the orders given, and to render the proper compensation. They are also instructed in their duties of their state of life, so that not one is ignorant of what is required of him or her.

The hidden as well as the outward life of a physician in a community is known to the local priest much better than he imagines. The confidence that a priest has in a physician on whom he can depend for reliable information at all times, whom he can trust, and whom he knows will be honest with all, without exception, is greatly valued by a priest, and while he may not know him personally, the physician surely is the gainer from a temporal point of view. It pays to be true and honest in your everyday walk of life. A physician who is known to be venal, or of loose morals will certainly find himself avoided by Catholics.

You will draw odium on yourself, your *alma mater,* and your professors, when you neglect the conventionalities of society. Proper decorum, knowledge, and the virtues of a conscientious man makes a physician a blessing in any community.

The church cautions physicians in regard to their diagnosis of insanity. Grave issues may be connected therewith, regarding your patients and humanity.

The church forbids hypnotism, mesmerism, mind reading, Christian science, clairvoyance, animal magnetism, spiritualism, et cetera, nearly all of which have been used in connection with medicine. I do not say that they are all humbugs, but they are totally unworthy of your attention. The enlightened views that you should form for yourselves, after proper investigation of all such imposture, will be a power of good in the social circle which your mental superiority, and moral integrity will make you a safe guard to your fellow men.

The priest's summons to attend a sick man should reach him as quickly as possible. Telephone messages are not desirable, because they are unsatisfactory. Children should not be sent with a message for a priest, except in cases of necessity. A priest should know before he leaves his home if possible, the nature of the disease, the condition of the sick person, and as exact location of the call as possible. He will endeaver to respond promptly at any sacrifice. No distress is too appalling, no disease too infectious, and no one too miserable for his prompt and immediate attention. This is a part of his obligation, binding on him in conscience, and on the fulfillment of which depends his reward. The time that he requires to be alone with the sick person may be of a very few moments' duration,—simply time enough to hear his confession. If the person is unconscious, he need not be alone with him at all, and the physician that is rendering service to such a patient need not vacate. The priest will proceed with the administration of conditional absolution, and extreme unction, which may be administered in the presence of anyone. Absolution is ordinarily pronounced only after confession. Where confession is impossible, conditional absolution is given. Extreme unction is anointing the organs of the senses, eyes, ears, mouth, nose, hands and feet, with oils consecrated for this purpose. In case the foot, arm, et cetera, are missing, the portion of the body near the missing part receives the unction. In case of immediate danger, only one unction is made, usually on the forehead.

A priest will always appreciate a physician's attention, when instructing the messenger for him, to state whether the person is conscious, and if the stomach is in such a condition as to retain Holy Communion. This will immediately place the priest in the position to know what to do, and how to act. It will be a courtesy which a priest will greatly appreciate. The fast required for Holy Communion is an absolute fast, from all nourishment entering into the stomach. We hold that the Redeemer is truly present under the Eucharistic species. This is the reason of the respect shown by Catholics who believe that God comes to them. Out of respect for that Redeemer whom they are to receive, they must be fasting from midnight. Physicians should know this, so that they can count upon medicine not being taken from midnight until after Communion is received. Priests give Communion to sick people very early in the morning, so as not to interfere with medicine. A physician ignorant of this strict fast required by the church often leaves himself open to ridicule, and in some instances loses a patron. A convalescing patient inquired from her physician, whether he thought she would be able to go to church, as she was anxious to receive Holy Communion, was answered, that it would do her no harm whatever, provided she wrapped herself up well, and had a good breakfast before setting out. This reply made him the laughing stock of the Catholics of the neighborhood for several days. Priests cannot take a morsel of anything until after Mass. Recently a distinguished physician with a world-wide reputation advised a priest who was in failing health to take a good glass of claret, and a small piece of bread before he began late Mass on Sundays. Needless to say that the doctor's ignorance was one of the stories of the next conference. Where there is extreme danger, however, a sick person, need not be fasting, and Communion can be administered any hour of the day or night, if the sick person's stomach is in a condition to receive it. Where there is danger of nausea, Communion is not administered. Very old and infirm people, and such as are not able to visit the church, receive Holy Communion several times a year, at home. They must remain fasting. The priest should be permitted when possible to administer all the rites of the church, to the sick person undisturbed. This ordinarily consumes about one-half hour.

The church condemns a physician who leaves his patient under the impression when seriously ill, that there is no danger. When a priest is not forthcoming, and a Catholic who has no opportunity of seeing one, is about to die, the physician will confer a great favor on such a patient, by telling him that he is near death, and that he ought to make an Act of Contrition. Every practical Catholic will know what that means.

While a priest should not act the part of a physician, the physician has no right to act the part of a priest. He should not incite discontent and promote uncharitableness. This is sometimes done by Catholic physicians, who think that they are not receiving sufficient attention from the priest, and seek redress by interfering in parish affairs. They must remember, that calling themselves Catholic, does not warrant every Catholic becoming their patient, as soon as they begin practicing in a locality. We frequently find that this is expected. When disappointment follows, the physician endeavors to create disturbance, party feeling and discord. The result is, that sooner or later the reaction will come to his detriment. A Catholic physician must remember that he has to prove himself, that in these days nothing but merit, and sound morality counts, and if he is no better than his fellow physicians, he cannot expect any better success, or more encouragement from Catholics. Being over-familiar with a priest, with him a great deal, or calling him by his first name, or any lack of respect will not bring more practice to a physician. Let a priest always be called by his official title, Father. You may not like the term, no more than you may like Colonel or Judge, yet good manners require it.

Priests are not required at operations. It is not their place. They know that they are in the way and should not be invited. They are permitted there at the urgent request of the sick one, who may feel that they may be a comfort to him, but this practice we do not think ought to be encouraged.

Frequently we hear non-Catholics say that Catholics are selfish; that in case of an accident, when a priest arrives, he asks the dying "are you a Catholic," and that he only stops at the side of those who claim to be. The reason of this is not understood. The greatest good must be accomplished. As a Catholic feels that his eternal salvation depends upon the ministry of the priest, at his last moment, the priest can afford him more help than a physician or layman. In all such cases, you will find, that a priest as soon as he gets through administering absolution to Catholics, is a veritable slave of all who are in distress. The reason for asking the question of religion is, that his first duty is to attend to the spiritual wants of Catholics, and after they are attended, his duty is to everyone alike. This charge of uncharitableness against the church, cannot be substantiated, for the Sisters of Charity never question the religion of a man, neither has it ever been known that a priest in extreme danger hesitates one moment, as to the religion of a person, in rendering immediate bodily help. This was well illustrated in the action of Bishop Muldoon, of Chicago, in the theater disaster, where he worked at the rescue until he himself was completely overcome.

Gentlemen, I trust that I have imparted some knowledge which will be of avail to you in your future life. What I have said is not to excite animosity, or discussion. Truths of the Catholic Church remain whether you like them, accept them or not. They are such as will not adapt themselves to you, but must be taken as they are.

Establishing a reputation for promptness, and exactness in attention, being faithful in informing the priest where there is danger, endeavoring to work for a higher end, than earthly gain, will make the physician a messenger of peace, a comfort and a blessing in every community.

PROGNOSIS; ITS THEORY AND PRACTICE.[1]

By GEORGE DOCK, A. M., M. D., ANN ARBOR, MICHIGAN.
PROFESSOR OF MEDICINE IN THE UNIVRSITY OF MICHIGAN.

THE topic I have ventured to bring before you is "Prognosis; Its Theory and Practice." As a text, let me quote from the oldest work we have on this subject,[2] which, though old, still has the freshness and modernism that genius gives to human productions:

> It appears to me [said the Father of Medicine] a most excellent thing for the physician to cultivate prognosis; for by foreseeing and foretelling, in the presence of the sick, the present, the past and the future, and explaining the omissions which patients have been guilty of, he will be the more readily believed to be acquainted with the circumstances of the sick; so that men will have confidence to entrust themselves to such a physician. And he will manage the cure best who has foreseen what is to happen from the present state of matters. For it is impossible to make all the sick well. This indeed would have been better than to be able to foretell what is going to happen; but since men die, some even before calling the physician, from the violence of the disease, and some die immediately after calling him, having lived perhaps only one day or a little longer, and before the physician could bring his art to counteract the disease, it therefore becomes necessary to know the nature of such affections, how far they are above the powers of the constitution. Thus a man will be the more esteemed to be a good physician, for he will be the better able to treat those aright who can be saved, from having long anticipated everything; and by seeing and announcing beforehand those who will live and those who will die, he will thus escape censure.

In this Hippocrates describes the essential importance of prognosis to the patient and the physician in relation to treatment. Besides this, prognosis is often important to relatives and dependants, not merely for reasons of sentiment, but in oredr to protect property and prevent unhappiness and destitution that would be as painful for the patient to contemplate as for the others to suffer. There is another aspect not present in the time of Hippocrates—giving the patient an opportunity to prepare himself for the anticipated life beyond the grave. In many cases, too, prognosis may have important bearings on political parties or for the commonwealth.

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[1] Oration in medicine at the fifty-fifth annual session of the American Medical Association at Atlantic City, June 7 to 10, 1904.

[2] The Book of Prognostics: the genuine works of Hippocrates, Adams' translation, Volume I.

The patient very often ignores these needs. If he asks for anything, it is usually either the name of the disease or that of the medicine the physician intends to use. He really understands as little of the significance of the name as he does of the action of the drug, and is often more quickly satisfied in proportion as both answers are occult.[3] What really should interest him is, as clearly as his mental development permits, some idea of the changes in his body, anatomic and functional, their present seriousness, the chances of death, or of complete or partial recovery, with, in the latter case, the probability of temporary or permanent disability, near or remote, in some organs or functions.

Within the last century prognosis has lost some of its relative importance. Unlike etiology, diagnosis, prophylaxis and treatment, it has no special literature, and is only occasionally the subject of addresses or essays. But much of the so-called prognosis of the earlier periods was really diagnosis, as in Hipprocates' vivid description of empyema, and his remarks in regard to other diseases of the respiratory organs. It also seems a mistake to assume that practical prognosis was more accurate at any period than in later ages of equal enlightenment. While we may admit that great masters, like Hippocrates himself, Galen, Sydenham and Boerhaave, were remarkably accurate in their prognostications, there is no reason for thinking that the rank and file, following their rules without having their keenness of observation and precision of reasoning, were more accurate, or as accurate as physicians of a later period when the formal study of prognosis was neglected, but when other means of knowledge were greater than before. We must bear in mind a fundamental difference in methods. The older prognosis was based on the observation of symptoms alone, and consciously or unconsciously took the standpoint of humoral pathology or some equally imperfect theory. One charge against ancient prognosis is not as serious as some have thought, namely, that the prognosis was made without a definite diagnosis. Even now we sometimes have to be satisfied with a very imperfect diagnosis, and yet may make a very good prognosis, at least for the immediate future. But the older prognosis was almost wholly lacking in anatomic and totally without chemical basis. Realizing how far short of accuracy the diagnosis must have been in many cases, we can understand that prognosis must have failed almost as often. Moreover, in early medicine, most attention was paid to acute diseases, or the acute terminations of chronic diseases, so that the many important chronic diseases that now make so much of medical practice were comparatively neglected.

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[3] Striking examples of the virtue of mysterious names are conspicuous in the practice of the popular sect of osteopaths. I could give many examples of the license with medical terms among these people, but as the evidence is derived wholly from patients I cite only one that can be vouched for by medical eyewitnesses. A hospital patient with typhoid fever, with the neck pain not infrequently felt in that disease, requested that his osteopathic physician be allowed to treat him. I was not unwilling, especially as the osteopath gave assurances that he would not attempt to treat the typhoid fever. Two internes "assisted" at the treatment. The osteopath, one of the *sang azul* of his class, after feeling the neck, announced that the transverse processes of three cervical vertebræ were displaced on one side. After some manipulation he pronounced the displacement relieved, though I was sorry to see that the pain was not much less than before.

Whatever shortcomings medicine may have—and those who cultivate the subject most thoroughly feel the needs most deeply—it must be admitted that diagnosis is much more certain than ever before. Not only are we able to distinguish more quickly and more accurately many diseases long known, such as some of the acute fevers, malarial disease, tuberculosis, diphtheria and pneumonia, but we have learned the existence and the means of detecting many diseases formerly confused with others. As examples, let me name only a few, such as the diseases originating in the vermiform appendix and the gall-bladder, diseases of the pancreas, many diseases of the blood, a large number of diseases of the nervous system and of the ductless glands, and many diseases caused by animal parasites, of which the sleeping sickness is the most striking example at present.

The older prognosis, far from being negligible, is really of fundamental importance. It gives the accumulated experience of ages that, untrammeled by detail, carefully noted broad and elementary features of disease. As gathered together in the aphorisms and prognostics of Hippocrates, and in the numerous commentaries on them—not always improving the original—it furnishes a fund of inestimable value, but like everything else in medical art, this knowledge is less useful when applied mechanically than when worked over in the crucible of personal experience, tested by other methods and transposed into current formulæ.

Older prognosis was possible to collect into fairly circumscribed space, but this is no longer true.[4] In proportion as diagnosis has become subdivided, specialized and enlarged, and as knowledge of morbid processes has become more complex, so prognosis has become more intricate. Older prognosis was based on broad, symptomatic lines, qualified in practice, we may be sure, by a consideration of the patient's constitution. The present basis is diagnosis, but of a different kind. It means not merely a recognition of the name of the disease, but a knowledge of the nature of the disease, still incomplete, but rapidly gaining in fullness and accuracy. In many cases we know the

[4] I have not attempted to include prognostic details, but would refer those interested to "Observations on Prognosis," by P. H. Pye Smith, Guy's Hospital Reports, Volume XLIV, 1887, as one of the most comprehensive and suggestive articles in modern literature.

causes, and a good deal of the nature of the causes; in many more we know the seats of the disease, and the anatomic, chemical and functional changes that result directly and indirectly. It is by the study of the altered functions that we can make a prognosis and plan useful treatment without knowing the name of the disease. Clinical and anatomic investigations have been aided by experiments and observations on lower animals, without which our knowledge would have been much less certain than it is. Scores of technical methods have been devised for reactions and explorations; natural forces previously unknown, such as the *x*-rays, have quickly been pressed into service. Long and painstaking observations have thrown much light on complications and sequels, their nature and detection. From all these things the prognosis proceeds naturally in most cases, but here again an indispensable part is a just recognition of the patient's constitution. It is probably true that in this connection we unduly neglect some prognostic aids furnished by the patient, such as changes of the physiognomy. But, on the other hand, we have much more accurate methods of ascertaining the constitutional factor than were formerly available. Constitution is still a somewhat vague term, but we can speak of it here as the result of the functions of all the organs. While the method of representing these functions is still inadequate, we can safely assert that we have much more accurate means of determining the condition of the heart, arteries and veins and the force of the circulation than we had before; we have gone considerably beyond the recognition of the apoplectic habit in foretelling the danger of vascular disease. We can usually estimate fairly well the efficiency of the blood-forming organs; we can determine with reasonable accuracy the capacity for work of the stomach and intestines, as well as a few details of nutrition and metabolism; we are rapidly getting beyond the limitations of Falstaff's water doctor in fixing the anatomic and functional ability of the kidneys, and we are working toward methods of testing the functions of liver, muscles and nerves. When we have all these factors thoroughly investigated it is probable there will be little need of the *vis medicatrix naturæ,* now an essential part of prognosis.

In the conclusion resulting from these things there is no room for a supposititious clairvoyance, an intangible gift of prophecy, a hypothetic intuition that trained intelligence cannot equal or industry surpass. We have a positive foreknowledge, a prescience, a prognosis, corresponding in accuracy and usefulness to our diagnosis and often in advance of our treatment.

In the foregoing I have spoken of the theory. In the practical use of prognosis the first to profit by that function is the physician. With an accurate prognosis, based on exact and thorough examinations, knowledge of the natural course of the disease and of the patient, the physician foresees the course of the malady and is prepared for changes, emergencies and complications. He is thus enabled not only to preserve his imperturbability, so essential in carrying out necessary measures of treatment, but he can also prepare the patient to meet coming events in better physical and mental condition than otherwise, and, what is often of even greater importance, the self-confidence thus shown stimulates the efforts and the compliance of others concerned in the case.

It is not easy to say how much the patient should share this foreknowledge, and how it should be conveyed to him. In many cases the patient does not ask an opinion, and in many others, either because the present disease seems too slight or for other reasons, the physician does not proffer one. Yet it is good mental discipline to work out the prognosis in every case, as a complement to the diagnosis, and in many the results should be stated to the patient. Many things may conspire to make such statements act either favorably or unfavorably on the patient as on the physician.

Physicians, like other people, can often be classified as either optimists or pessimists. Not that these tendencies affect all parts of the individual's activities. One may be a perfect Pangloss in sociologic, political or climatic matters, and yet take a gloomy view of all his patients. (I am not speaking of those who, rarer in the profession than in some of its parasitic growths, habitually exaggerate the danger of their cases, making every angina a diphtheria, every erythema an erysipelas and every bronchitis a threatened pneumonia.) Another who is perpetually cast down by the failure of democratic government or the need of a stronger one, the immorality of the rich and the rule of the bosses, may meet every case with hope and cheer.

But the practice of prognosis should be cultivated as objectively as any other part of medicine. Not only the therapeutic indications suggested by it, but also the human ones, should be carried out without fear or timidity, without unnecessary harshness, but also without the false benevolence that often does more harm than brutal frankness or ignorance. Here, as in other departments of medicine, the welfare of the patient must be the touchstone by which the action proposed should be proved.

No disease should be looked on as insignificant. Nothing seems less becoming than to hear medical men speaking lightly of disease in general, or of any disease in particular. It is no consolation to the mother whose child has died of one of the rare complications of chickenpox to find that many physicians think that too trivial to concern themselves with it. Nor does it increase confidence in the profession to have hysteria and neurasthenia considered imaginary and ridiculous evidences of perversity, while the impatience, not to say lack of scientific interest, sometimes shown toward other less well-defined neuroses, undoubtedly has some relation with the crowded ranks of followers of isms of all kinds.

In acute diseases the best general rule is still that of Hippocrates (Prognostics; 19, sect. II): "In acute disease it is not quite safe to prognosticate either death or recovery." A case of this kind, however, should not be considered likely to die unless from a complication, or from the effect of a preexisting disease, though in certain diseases, such as scarlet fever and diphtheria, the danger of a sudden change and of death should be made known in the beginning. Of course, in cholera and plague, and even in cholera infantum, such information is rarely necessary. In some other acute diseases the study of prognosis prepares the physician not to be unduly elated by the remissions that are so reassuring to relatives. The temporary amelioration in meningitis and peritonitis, in which the patient seems almost free from symptoms, may be mentioned. Less disappointing, but still ominous, is the occasional lull in bronchopneumonia. But in the cases I have just mentioned it is rarely advisable to bring the unfavorable probabilities too strongly bfore the patient In these we often need the effects of reassurance and of hope For the latter, as we see it in medical practice, is not merely the "kind nurse of old age—hope—which," as Pindar says, "more than aught else steers the capricious will of mortal man"; in acute cases especially it is distinctly stimulating to physical and mental processes. Sir Dyce Duckworth,[5] speaking from a ripe experience, recently gave an address on "Hopefulness in Medicine," in which he emphasized this fact, and Niemeyer, equally successful in his career, at his medical promotion defended among others the thesis *medicus semper hilaris.* On the other hand, it is a serious error not to point out, after recovery from certain acute diseases, the possibility of sequels, sometimes months or years afterward, and the advantage of examinations at intervals for the purpose of detecting them before they become inveterate. The thorough examination of the urine at intervals after scarlet fever, of the lungs after pleurisy and all bronchitic diseases, of the heart and arteries after many infectious diseases, often has great practical value.

In chronic diseases there are few exceptions to the rule that the patient should be told the nature of his case as fully as possible. At least, in patients who can be made to understand, and who have a possibility of recovery, of definite improvement or of long duration, there are only individual exceptions. Patients with tuberculosis, heart disease, kidney disease, and disease of the alimentary tract cannot get the best possible results unless they understand why and how they should do certain things and why they should avoid others. Tact and patience and a knowledge of human nature are essential in this. The statements made should be as simple as possible, as brief as definiteness permits, without pathologic explanations. Better no statement than an unconsidered or an unintelligible one.

In talks of this kind we too often forget how different are the ideas of nonmedical persons, even those who have studied physiology in the public schools, from our own, regarding the body, its functions and diseases. I am always interested in seeing how soon medical students lose the lay point of view, just as one forgets an unused foreign language, and how sometimes they never recover it. Yet unless they do, they lack valuable means of giving aid. Darwin has noticed how everyone who studies profoundly a subject often becomes unaware on what points the ignorant require information. Carlyle, as John Beattie Crozier tells us, imagined his stomach as some old teakettle, thickly encrusted with fur, and I have seen an otherwise intelligent man on the point of using strong sulphuric acid for a cough, because he found by experiment that oil of vitriol dissolved sputum more quickly than any other reagent he had tried. Nor is it enough to make the explanation. We must ascertain whether the statements are understood, and, if possible, whether they are accepted. How often, even with an intelligent individual, after we have stated the existence of a small tuberculous focus, and described the results of rational treatment, we find the patient shutting himself in a dark and close room, taking "lung cures," cough syrups and more or less medicated cod-liver oil; and how often, after demonstrating the sufficiency of dietetic treatment in a digestive disease, we find the patient taking bitters, digestive ferments, usually well neutralized by alcohol, antiseptics and other drugs less easy to classify. So time and patience must be devoted to this part of the work, and we should never be discouraged by failure. I am convinced that there is an improvement in the possibility of carrying out rational treatment, notwithstanding the insidious propaganda of useless or dangerous methods in and out of medical journals.

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[5] Duckworth, Sir Dyce: "Opening of University of Liverpool Medical School," *British Medical Journal,* October 3, 1903.

It is much easier to advise in cases that have a strong tendency to recovery than in those that have not, and there is room for difference of opinion and of practice in the latter, because the conditions vary with patients according to individuality and accidental factors. A number of aspects present themselves for consideration. In the first place, there is often an element of diagnostic or prognostic uncertainty, where the prospects are better than they seem. Sir Dyce Duckworth[6] has formulated universal experience in pointing out the advantages of the "cautious 'if,'" and if the alternative accepted is the hopeful one, much good can be accomplished in many cases. An interesting example is given by Kussmaul in his fascinating "Jugenderinnerungen." Having made a reputation as a zealous dissector, and having won over his confiding peasants to the many advantages of postmortem examinations, he was asked by the father of a girl with advanced tuberculosis of the peritoneum to arrange for an autopsy on the daughter, when she died. Although Kussmaul, too, thought the daughter was lost, he retorted that he could not speak of an autopsy until the patient was dead. Notwithstanding many obstacles, the girl recovered. The tendency to take the less hopeful alternative is still shown in some cases of tuberculous disease in stages not far advanced, though it is not so common, fortunately, as it was many years ago, to see such patients given over either to a life of dissipation or of abject despair. The prognosis of valvular disease of the heart is also in a much more optimistic vein than it was fifty or even twenty-five years ago. However, in many cases the prognosis needs to be tested by a therapeutic "if" that is not as well recognized as it deserves. The physical conditions may seem hopeless, and yet if the action of the heart can be improved the case may assume a very different aspect. The advantages of trying were well illustrated by a case in which a woman with aortic and mitral insufficiency and moderately severe loss of compensation was given up as beyond treatment by her family physician. Not knowing this I told the relatives the impossibility of complete recovery, the danger of sudden death or more probably rapid failure at any time, but also the possibility of improvement and a fairly comfortable life for some time, all the more worth trying to realize, because the condition was not complicated by medicinal action, and the other important organs showed no serious alteration. The family physician then wrote me admitting that he had stated improvement was out of the question, and treatment not worth trying, although under subsequent treatment the patient lived two years and nine months.

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[6] Duckworth, Sir Dyce: "Address on Medicine," *British Medical Journal*, 1896, II, page 251.

In cases hopeless in a more certain degree than such as I have just mentioned, it too often happens that treatment is abandoned too early in the case. Patients with cancer of the stomach or other inoperable tumors, cirrhosis of the liver, and many other diseases are permitted to drag out their existence without relief. There are several reasons for this. Sometimes families, having been told the truth about such a patient, refuse all further medical aid, even when the conscientious physician who gives the information points out what can still be done.

Many physicians voluntarily discontinue attendance when they realize that the end is inevitable, with the feeling, doubtless, expressed by Sir William Temple. The latter said that "an honest physician is excused for leaving his patient when he finds the disease growing desperate, and can, by his attendance, expect only to receive his fees, without any hopes or appearance of deserving them." This, however, ignores the fact that in such cases the accomplished physician can often do more real good to the patient than in many cases that recover, while the opportunities for obviating despair, alleviating pain and soothing mental anguish, and for exhibiting thoughtfulness, gentleness, persistence and variety of resources, are more valuable to the physician than any fee. Even in acute cases it sometimes happens that the physician is either discharged or withdraws because the indications seem hopeless, and I have known of patients with pneumonia living for one or two days in this way, the family waiting for the end of a life that with greater oftort might have been saved. Sir Francis Bacon described this tendency as one of the deficiencies of medicine, "so that Sylla and the triumvirs never proscribed so many men to die as physicians do." For, as he continued, "the office of a physician is not only to restore health, but to mitigate pain, and not only when such mitigation may conduce to recovery, but when it may serve to make a fair and easy passage."

Improvement in methods of treatment have an important relation to prognosis, in that many diseases, considered hopeless at one stage of knowledge, may in another offer many chances for recovery or alleviation. In this connection a critical knowledge of current medical literature is necessary, and a realization of the value of medical evidence. Few things can be more disastrous to the physician's mental development—never completed—than constant change of therapeutic method, but there are differences. One need not try every drug proposed for the treatment of typhoid fever or pneumonia, nor every new antipyretic or hypnotic. But the physician who does not inform himself quickly of the value of surgical treatment in various diseases as it is developed, in pelvic diseases, brain diseases, diseases of the appendix, biliary tract, stomach and pancreas, comes very near deserving the reputation of an unscrupulous practitioner. In these departments, too, mistakes are made and exaggerations are inevitable concomitants of progress, but the gain is often distinct and unmistakable, and often changes the prognosis from one extreme to the other.

It may seem that I have taken a too purely medical view of the practice of prognosis. Can we always act from the standpoint of simple diagnosis and prognosis, or must we not at times take into consideration the weakness, fears and prejudices of people? In trying to get the best light on this subject I have for many years noticed the opinions of patients and their relatives, as well as of nonmedical writers, and it is instructive to learn how those who are not physicians approach the subject. Many physicians have been influenced by the views of Percival, from whose interesting work on Medical Ethics some of the best parts of the old Code of the Association were taken. Percival said:[7]

> A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely warning of danger, when it really occurs, and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming, when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy, for the physician should be the hope and comfort to the sick; that by such cordials to the drooping spirit he may smooth the bed of death, revive expiring life and counteract the depressing influence of those maladies which rob the philosopher of fortitude and the Christian of consolation.

In general, this furnishes a useful guide to conduct, but nevertheless requires some examination. Part of it reminds one of the maxim of John Halle, who as far back as 1596 wrote:

> With one consent uniformlye
>   Comfort the wounded man,
> But unto some good friend of hys
>   Express all that you can.

In the first place, the truth is not always so alarming to the patient, painful as it often is to the physician. In fact, it seems to me this is one part of our duties that does not become less trying with increasing experience. To the sick man, whose thoughts have been turned toward the end longer than others suspect, intimation of a fatal end often brings no shock, but rather relief from the ending of a painful uncertainty. According to the rules of the Roman Catholic Church, a timely announcement should always be given, and those who have witnessed the last days of members of this faith can confirm the statement that good often follows, speaking merely from the medical standpoint, and rarely harm, while the same thing is true of many of other faiths or of no faith. Even where we have to give a fatal prognosis there are certain mollifying influences that can be introduced, aside from those that spring from a tender heart. A hope can be expressed based on the fallibility of human knowledge in general and medical knowledge in particular.

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[7] "Medical Ethics: or a Code of Institutes and Precepts, adapted to the professional conduct of physicians and surgeons, with an appendix containing a discourse on hospital duties: also notes and illustrations," by Thomas Percival, M. D., Manchester, 1803, page 31.

The rule in regard to giving the patient a good prognosis and the relatives a bad one, can often be followed, but is a very fallacious one on the whole. It is often more necessary to keep up the spirits of the relatives, especially those who have to nurse, than those of the patient, so that sometimes the rule can be reversed with advantage. Darwin[8] cites some interesting and instructive examples of this kind, from his father's practice, and Billroth[9] has expressed himself with much feeling in one of his letters. Moreover, the relatives informed, either from a feeling of compassion or otherwise, may not bring the patient to act on the information, and I have known of serious financial loss befalling a family because the relatives entrusted with the task of breaking the news to the patient did not do this. Another risk is that the relatives may divulge the fatal prognosis in such a way as to put the physician in the light of a heartless deceiver, and thereby cause the patient to lose all

[8] "The Life and Letters of Charles Darwin, edited by his son, Francis Darwin, New York, 1887, Volume I:" "Called in to see a patient who had been given up to die by the family physician, Dr. Darwin took a different view of the matter and maintained that the man would recover. He was found quite wrong in all respects, and owned his error. He was convinced that he should never again be consulted by this family, and was much surprised at being called in after a few months by the widow. He asked a friend of the widow to find out why he was again consulted. The widow announced that she would never again see the odious old doctor who said from the first that her husband would die, while Dr. Darwin always maintained he would recover. In another case Dr. Darwin told a lady that her sick husband would certainly die. Some months afterward he saw the widow, who was a very sensible woman, and she said, 'You are a very young man, and allow me to advise you always to give, as long as you possibly can, hope to any near relative nursing a patient. You made me despair, and from that moment I lost strength.' 'My father,' continuedd Darwin, 'said that he had often since seen the paramount importance for the sake of the patient of keeping up the hope, and with it the strength, of the nurse in charge.' "

[9] "Briefe von Theodor Billroth, 1902:" Speaking of the slow decline of Professor Breisky, and of the attending physician telling the whole truth to the wife, he remarked: "I admit that under certain circumstances this is necessary: but here I do not think it is necessary. How can the poor wife, without a glimmer of hope, bear the weeks until the Liberator of all sorrows gently approaches the husband. We should give her courage, and the poor patient morphine. A hard task. But let us remember that every family physician is in this situation hundreds of times, and often has to see his incurable patients daily. If the young man suspected these mental tortures when he enthusiastically enters the temple of Æsculapius he would surely often turn back. To face the unveiled figure of Sais requires all the undaunted resignation that we slowly win in our profession."

confidence in him. On the whole, in cases where the patient should know the truth the physician is often the best one to state it, and he should see that this is done before it is too late.

Exceptions to the rule of candor may occur in the case of children, in women with no spiritual obligations or business responsibility, or in exceptional cases in men. No general rule can be laid down, but that such exceptions occur can be confirmed probably by every physician. A striking example of this is quoted by Darwin.[10]

Of course, this part of the subject is closely related to the theory of ethics, and many writers on this subject have touched directly on the question of medical veracity with, as one might anticipate, diametric differences of opinion. Some moralists of the strict school of Kant and Fichte insist that any deviation from the absolute truth is wrong in medicine, as they assert that it would be wrong even for the purpose of saving the whole race. Others believe with Paulssen, who says: "There is not a physician in the world who does not give deceptive answers to his patients, who does not excite hopes that he does not share. He does not blame himself, nor do others, for everyone does the same." Johnson, "the stern old moralist," in his remarks on the subject, laid open a serious flaw in his own logic: "You have no business with consequences, you are to tell the truth." But surely the physician's chief interest is with the consequences, and if he thinks the patient can gain only by misrepresentation, it is just as proper for him to use it as it would be to give a medicine that in other cases might be quite improper. But the physician in such a dilemma would do well to bear in mind the next sentence in Johnson's *ipse dixit:* "You are not sure what effect your telling him that he is in danger may have. It may bring his distemper to a crisis, and that may cure him." Jonathan Dymond, as strict as any one in his morality, threw a gleam of stern humor into the discussion: "Persons frequently employ falsehoods to the sick man who cannot recover, lest it should discompose his mind. This is called kindness, though an earnest preparation for death may be at stake on their speaking the truth. There is a peculiar inconsistence sometimes exhibited on such occasions. The persons who will not discompose a sick man for his interest in futurity, will discompose him without scruple if he has not made his will."

This part of the discussion might be indefinitely prolonged, but I think we can never get far away from the principle I intimated in the beginning—that in practical prognosis we must individualize, just as we have to in therapeutics, with the patient's welfare ever the object of our activity.

Accidents that follow an unfavorable prognosis occasionally suggest a revision of methods. I have already alluded to the error formerly not uncommon in the treatment of tuberculous patients. More acute results sometimes follow a fatal prognosis, as in two of my patients who resorted to suicide. One was a man with far-advanced carcinoma of the stomach, to whom I recommended palliative treatment and advised against a useless effort at radical treatment. The patient left for his home, but threw himself from a fast train and was killed. In another patient, a man with a large kidney tumor, apparently with many adhesions, my surgical colleague and I advised against an operation. The patient went to another hospital, and apparently received similar advice, for he shot himself through the tumor, and died in a short time. From a broad biologic standpoint it does not, of course, make any difference whether an individual organism dies as either one of these, or as it would if left to its fate. But no matter how one may feel on the subject of suicide, I have always thought these men less fortunate than another patient with carcinoma of the stomach, also far advanced. To him, in advising against an operation, I added that if he could find a good surgeon who was willing to operate, he might submit. He underwent the operation at the hands of one of the most distinguished surgeons in the country, and died on the table. In such a case the result is often unfortunate, because it prevents operations on other and more promising cases, but for the man himself, fighting to the last, it seems to me one can have only respect.

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[10] *Op. Cit.* "He was sent for by Mr. P., who said, 'From all that I have seen and heard of you I believe that you are the sort of man who will speak the truth, and if I ask you will tell me when I am dying. Now I much desire that you should attend me, if you will promise, whatever I may say, always to declare that I am not going to die.'"

This brings up a question on which a few words may be proper—the question of euthanasia. Every few months some one—usually not a physician—proposes that people with incurable diseases should be killed by some painless method. The plan offers so many opportunities for crime that it would be difficult to carry out, but aside from that it involves important principles. The difficulty of telling when the proper time had come would often be insuperable. Aside from examples of fortitude and other virtues exhibited by the dying, how much the world would have lost if a chronic invalid like Stevenson had the cord of his life snapped at one of the times when the *aes triplex* of his soul seemed battered through! To take a less selfish view, we can think of the "pictures of human patience, the visions of ripened character, which have been revelations and inspirations to generations of mankind" (Phillips Brooks), and see these repeated daily in sick rooms of all degrees, while the self-sacrifice and kindness developed in others at such times cannot but be of untold benefit to the race. To most physicians the suggestion of any planned shortening of life must be abhorrent. For countless generations they have been doing their utmost to lengthen life and lessen disease. They have shown how to prevent the plagues that formerly made life almost as bad as a perpetual illness for the survivors, and they have also shown how many deaths can still be prevented. On the other hand, they can, in most cases, so treat the dying man that the bitter anguish often associated with death is absent, that life is not only less painful, but, actually longer, so that they will continue to follow the rule of the Father of Medicine, and "give no deadly medicine to any one, even if asked, nor suggest any such counsel."

ORIGINAL ABSTRACTS.

MEDICINE.

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THE MODE OF INFECTION OF TUBERCULOSIS.

As THE result of a critical analysis of the literature and of his own extensive experimental and anatomical experience, Lubarsch comes to the following conclusions:

(1) The respiratory organs are by far the most frequent seats of entrance of infection for all forms of tuberculosis.

(2) Progressive pulmonary tuberculosis occurs in the following ways:

a.—The inhaled tubercle bacilli set up a tuberculous process in the apical bronchi of the third to the seventh order, and from that infect other parts of the lungs through the bronchi (type of Birch-Hirschfeld and Schmorl).

b.—The bacilli pass the bronchi and increase in the alveoli, setting up a tuberculo-pneumonic process (type of Laennec and Koch).

c.—The bacilli get from the bronchi to the peribronchial tissue and set up a tuberculous lymphangitis or peribronchitis.

d.—They pass from the alveoli or bronchi into the intrapulmonary lymph-follicles and there set up tuberculous foci.

e.—They go from the lungs into bronchial glands, render these tuberculous, and then infect the lungs either hematogenously (type of Ribbert) or by direct rupture into a bronchus (type of Weigert and Hanau).

f.—The rarest form is for the lung to be infected through the blood from another and older focus anywhere.

(3) Besides inhalation-tuberculosis a somewhat frequent mode is infection through food (Koch and von Behring), especially important in infantile tuberculosis.

(4) A progressive tuberculosis occurs frequently not from the original infection, but from latent foci after special disposition has been set up.—(*Fortschritte der Medizin,* Numbers XVI and XVII, 1904).

G. D.

TUBERCULOSIS IN CALIFORNIA.

THE report of the Tuberculosis Committee of the Medical Society of the State of California (*Southern California Practitioner,* June, 1904) contains many things of interest. In order to gather information blanks were sent to physicians, health officers and county recorders, to the number of about 4,000. The questions investigated were: the number of cases in the state; the annual number of deaths; the number contracted in the state; the measures taken for preventing the spread; whether physicians were in favor of taking measures for prevention. Only 1,225 replies were received, so that the information must be considered fragmentary, but many details are none the less valuable. Health officers and recorders reported 2,308 deaths. One hundred sixty-one cases were reported as contracting the disease within the state, but San Francisco, Los Angeles and many other important places were not heard from. Thirty-eight replies told of preventive measures being taken, "most of which were vague and indefinite." The views regarding prevention are instructive, because they show how, even in California, where the knowledge of tuberculosis may be said to be greater among physicians than is the case in states not used as refuges by the tuberculous, there is still much educational work to be done. One thousand fifty physicians advised preventive measures. Among them 70 favored disinfection of sputum; 22, disinfection of all ejecta; 20 favored health board supervision—one opposed this; 77 favored compulsory notification; 54 favored antispitting ordinances; 3, public spittoons; 66 favored fumigation of rooms of patients after death or removal; 8, disinfection of public drinking cups; 18, disinfection of public vehicles and sleeping cars.

The following replies seem especially noteworthy: One reporter favored "barring them out of hotels;" 137 (!) favored isolating all tuberculous individuals in separate communities, hospitals or grounds; 13 favored segregation of "the poor" only; 4 favored the education of eastern physicians not to send patients to the state when in the last stages—one opposed this, for reasons not stated; 85 favored preventing eastern consumptives from coming to California, but 18 opposed this; 108 favored state sanatoria—one opposed them; 42 favored prevention of marriage of tuberculous patients.

Among measures preventing infection the improvement of house and personal sanitation, and of municipal sanitation were recommended by a number, but more than twice as many—143—favored a campaign of education by means of pamphlets, lectures and teaching in the public schools. Seventy-one favored physicians giving explicit instruction to the family, as to the cause of the disease and as to necessary prophylactic measures.

While the replies show a combination of rare naivete and optimism, the work of the committee shows in general great sagacity on the more important aspects of the question.

All unprejudiced persons will agree that barring consumptives out of hotels, isolating them in camps and communities and quarantining the state against them are "unnecessary, unscientific, impossible of enforcement and inhumane. The agitation of such measures can do nothing but harm. It frightens people, gives them an unjustified fear, and yet does nothing to prevent the spread of the disease." Instead of the things suggested, the committee recommended:

(1) That physicians attempt to carry out recognized measures for the prevention of the spread of tuberculosis, such as notification and disinfection, and the education of patients as to the nature of the disease and the manner of its prevention.

(2) The employment of antispitting ordinances, the provisions of public spittoons, notification for the purpose of instruction and disinfection, state sanatoria for the poor. It deprecated all forms of phthisiophobia, especially the quarantining of the state and the prevention of marriage of tuberculous persons. G. D.

SURGERY.

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TWO THOUSAND OPERATIONS FOR APPENDICITIS, WITH DEDUCTIONS FROM PERSONAL EXPERIENCE.

John B. Murphy, M. D. (*The American Journal of the Medical Sciences,* August, 1904) says very little about the two thousand cases and his results, but the deductions are of great value. Though some surgeons may differ with him on certain minor points, the whole is so plainly written that any physician who reads the paper should understand his position and would do well to use it as a text for his future work.

A page and a half is given to the surgical anatomy of the appendix and a few lines to the etiology of appendicitis. He criticises some of the opinions held by others but offers no very strong ones of his own. Concerning the symptoms as a basis for diagnosis he is very decided. The order in which they occur are pain, nausea or vomiting, abdominal sensitiveness and elevation of temperature. "When that order varies I always question the diagnosis." When pain is the last of these symptoms to appear he is certain that the case is not one of appendicitis. Leukocytosis is of value only when associated with other symptoms. The character of the pulse is of little value alone but in later stages it may indicate the degree of intoxication and help in the prognosis. The tumor is not always real but may entirely disappear under anesthesia. The size of the tumor does not indicate the amount of pus. The area of infiltration differs with different kinds of infection. Fluctuation can be determined only when there is a large amount of pus.

The clinical course is fairly uniform. Perforation may take place in forty-eight hours without the presence of a foreign body in the appendix. The presence of a fecal concretion may hasten perforation; occasionally no sign of disease may be given until perforation has taken place. This happens in about one per cent. A sudden fall of temperature should be considered serious; it indicates cessation of absorption due to perforation of the appendix, escape of the contents of the appendix into the bowel, gangrene of the wall, local immunity or diminished virulence. The clinical picture changes at the end of fifty hours according to the leisons of the appendix, the type of infection and the degree of involvement. It may subside by rupturing into the cecum or may become circumscribed without rupturing into the peritoneal cavity and later reach the abdominal wall. Numerous complications may follow an unoperated appendicitis, any one of which may be serious and some may prove fatal.

Collapse is a symptom of septic intoxication and not of perforation as was formerly supposed. The time for operation may be divided into four stages. The first stage is within the first forty-eight hours. This is the most favorable time and comparatively free from danger. One will seldom make a mistake in diagnosis and will be convinced that he is dealing with appendicitis before this time has passed. The second stage is from the second to the fifth day. We should operate in this period but avoid extensive manipulation. Let out the pus and remove the appendix if it is easily found. Better to remove the appendix at a second operation than manipulate too freely. The patient is put to bed in a semisitting position and large quantities of salt solution administered per rectum. No water should be given by mouth. The third stage is from the fifth to the seventh day, while the inflammation is subsiding. The operation is not so urgent as in the previous stage. The presence of pus is now the element of danger and we cannot have a feeling of safety until it is removed. The fourth or intermediate stage demands operation because of the danger of recurrence. This is a time of comparative safety. The operation employed is so well known that a description is not necessary. The after treatment, while brief, is to the point.

The results, which showed eleven deaths in the first hundred cases, have gradually fallen to two per cent. "It seems to me that every death from appendicitis is chargeable directly to the people either for not calling in the physician sufficiently early after the onset of the symptoms or to the physician and surgeon for not acting promptly when they are called." The results from this operation have been very gratifying, few complications remaining. Hernia, the most common, is now practically avoided except in badly infected cases. The attending physician is expected to make an early and accurate diagnosis and then advise the operation. Before the thirtieth hour from the beginning of the attack the patient may be moved from his home to a hospital. After that time it is better to convert the home into a hospital and operate there. This can be done with little inconvenience and risk. The paper constitutes one of the milestones of surgery.

GYNECOLOGY.

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THE RELATION OF THE APPENDIX TO PELVIC DISEASE, BASED UPON A CLINICAL AND MICROSCOPIC STUDY OF TWO HUNDRED CASES.

Doctor Reuben Peterson (*American Journal of Obstetrics,* July, 1904) has drawn his conclusions from a careful macroscopical and microscopical study of appendices removed in two hundred laparotomies performed for pelvic disease. The clinical history has been carefully worked out, in relation to the histological and pathological findings in the appendix. He advocates the combined operation, not limiting himself to a strictly gynecological field when the abdomen is opened, but correcting any pathological condition he may find in the abdomen, providing the general condition of the patient does not contraindicate the prolongation of the operation. He states that one is unable to tell correctly by macroscopic appearance of the appendix, whether it be diseased or not.

Of the two hundred appendices removed, the following classification is made, according to microscopical findings:

Negative, sixty-five cases, 32.5 per cent.
Chronic inflammation, fifty-seven cases, 28.5 per cent.
Doubtful significance, forty-one cases, 20.5 per cent.
Former inflammation, twenty-eight cases, 14.0 per cent.
Periappendiceal inflammation, three cases, 1.5 per cent.
Acute inflammation, six cases, 3 per cent.

Of these cases ninety-four, or forty-seven per cent, showed absolutely that the appendix was diseased or had at one time been the seat of diseases. One hundred six cases belonged to the negative or doubtful significance class.

Clinically, the two hundred cases have been tabulated under different headings, according to age, social state, dysmenorrhea, abdominal pain which might have been due to a diseased appendix, and according to the disease for which the primary operation was performed. Observations were made at the time of operation regarding the shape, length, adhesions and size of the appendix.

The social state was shown to have but a slight bearing upon the relation of the appendix to pelvic disease.

The author's table, regarding the length of the appendix in relation to the age of the patient differs from the tables formed by Ribbert.

He finds the maximum length of the appendix is reached up to thirty years. This agrees with Ribbert's findings. There is a decrease in length in the next decade, to be followed by an increase in the last two decades, contrary to Ribbert's statistics, where the average length decreases during each decade.

Ribbert's Table. Length in 400 cases.	*Author's Table.* Length in 107 cases.
10-20 years—9.75 centimeters.	
20-30 years—9.5 centimeters.	20-30 years—10.5 centimeters.
30-40 years—8.75 centimeters.	30-40 years— 8.1 centimeters.
40-60 years—8.5 centimeters.	40-60 years— 9. centimeters.

In normal appendices, the author finds a gradual decrease in the length of the appendix, with the age of the patient. In inflammatory cases the decrease in length is as given in his table above. It is probable that inflammatory changes play an important rôle in determining the length of the appendix. It may be inflammatory changes rather than simple atrophy which causes a decrease in length as age advances.

In those cases in which the appendix was found normal, dysmenorrhea was present in 36.9 per cent, while in those in which chronic inflammation was present the per cent was 41.8. The writer believes that the pain in the pelvis often comes from a diseased appendix. Possible appendiceal pain was present in forty-five per cent of the cases in which there was evidence of chronic inflammation, and was present in but thirty-three per cent of those cases in which the appendix was reported normal.

Adhesions were present in 18.5 per cent of the two hundred cases, being met with twice as often in those cases showing chronic inflammation of the appendix as in those cases in which the appendix was found normal.

The mere shape of the appendix and the presence of fecal concretions do not indicate disease.

In chronic disease of the appendages 58.4 per cent were accompanied by normal appendices and 41.5 per cent showed past or present changes in the organ.

In uterine fibromata fifty per cent of the cases had normal appendices and fifty per cent showed some pathological condition.

In 70.9 per cent of the ovarian cystomata the appendices showed inflammatory changes while in 29.1 per cent they were normal.

The appendix was removed in each case by a purse-string suture of catgut and invagination of the appendix stump.

The author has come to the following conclusions, based upon his investigations:

CONCLUSIONS.

(1) Only a little over fifty per cent of appendices removed during the course of operations for pelvic lesions will be found microscopically to be normal.

(2) The remainder will show forms of acute and chronic inflammation or the result of former inflammation.

(3) The average length of the appendix is between eight and nine

centimeters. In one hundred seven cases of the present series the average length was 8.25 centimeters.

(4) The maximum length of the appendix is found between the ages of twenty and thirty years. After this period the average length of the appendix is less. While this diminution probably is in part due to normal atrophy, in a certain proportion of cases it is influenced by inflammatory changes.

(5) Menstrual pain may be due to or enhanced by the presence of an inflamed appendix. The congestion incident to menstruation increases the inflammation and gives rise to attacks of appendiceal colic.

(6) It is exceedingly difficult to differentiate between pain due to pelvic lesions and pain due to chronic appendicitis. In the present series of cases a much larger proportion of patients whose appendices were abnormal gave histories of having had this pain of doubtful origin.

(7) The appendix is adherent twice as frequently in those cases where microscopic examination shows past or present disease. A certain proportion of adherent appendices are, however, perfectly normal microscopically.

(8) Mere shape of the appendix cannot serve as an index of its normality or disease. Appendices may be club-shaped, constricted or bent upon themselves and yet be perfectly normal microscopically.

(9) The appendix is the seat of fecal concretions in at least eight per cent of all cases. Their existence does not denote that the appendix is diseased.

(10) Nearly fifty per cent of patients with chronic disease of the appendages show accompanying disease of the appendix.

(11) This inflammation may be the result of the direct contact of the appendix with diseased adnexa or infection may travel from the latter to the appendix through the lymphatics connecting the two.

(12) In chronic disease of the appendages adhesions of the accompanying appendices are present in nearly fifty per cent of the cases, where microscopic examination shows the latter to be diseased. In a certain proportion of cases, however, although the appendix may be adherent, it is perfectly normal.

(13) In chronic disease of the appendages the appendix which is club-shaped, constricted or contains fecal concretions, is not necessarily diseased.

(14) In fifty per cent of patients with uterine fibromata there is accompanying disease of the appendix.

(15) In 70.9 per cent of patients with ovarian cystomata the accompanying appendices are diseased. The appendix is not infrequently adherent to an ovarian cyst and may even infect the latter.

(16) The ordinary median abdominal incision in the class of cases under consideration amply suffices for the removal of the appendix.

(17) Such removal should neither increase the mortality nor prolong the convalescence.

(18) Since it is impossible for the surgeon, by gross appearances alone, to determine which appendix is diseased, and since nearly fifty per cent of appendices where the abdomen is opened for other purposes are found diseased, it is the surgeon's duty in the absence of contra-indications to remove the appendix in every such case. Otherwise he will leave behind diseased appendices, which may prove a subsequent source of suffering to the patient.

(19) Systematic examination of series of removed appendices show the occasional presence of primary carcinoma in such an early stage that it could not have been detected by inspection at the time of operation. Removal at this early stage means probably a nonrecurrence and the saving of a life. Even were carcinoma of the appendix not commoner than once out of two hundred abdominal sections it would still be an argument for the removal of the appendix in every case where the abdomen is opened for other purposes. C. L. P.

OBSTETRICS.

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THE PREVENTIVE TREATMENT OF PELVIC FLOOR LACERATIONS.

Edgar (*American Journal of Obstetrics and Diseases of Women and Children,* July, 1904) says that preservation of structure of the pelvic floor during childbirth is stated by some authors as second in importance only to saving of lives of mother and child.

The most important part of the management of the second stage of labor is the prevention of lacerations of the pelvic floor. Superficial lacerations often occur and are often unavoidable. Deep lacerations are avoidable in normal cases. It is very important that rupture of the pelvic floor be prevented as a large number of gynecologic cases are due to this cause.

The three principal causes of perineal lacerations are: (1) Too rapid expulsion of the fetus, so that tearing instead of stretching results; (2) relative disproportion in size between the presenting part and the parturient outlet; (3) a faulty mechanism of labor whereby larger circumferences of the head and shoulders than necessary pass through the parturient outlet.

Good results can often be obtained by a preliminary digital stretching of the vertical outlet in primiparæ, especially in elderly primiparæ. This is done by passing two fingers, palmar surfaces down, into the parturient outlet and making intermittent backward and lateral massage-like pressure. The assistance of ether or chloroform is most valuable. Fifteen or twenty minutes is usually sufficient to enlarge a most rigid outlet.

Episitomy is very rarely indicated. The greater the clinical experience, the more infrequently will the operation be required.

In head deliveries, endeavor to have the delivery so slow that stretching and not tearing results. The pelvic floor muscles are relaxed in the interval between the uterine contractions and delivery of the head is more safely accomplished at this time.

Cleidotomy, or division of both clavicles in dead fetuses, diminishes the bisacromial diameter from 4¾ inches (12.7 centimeters) to four inches (7.5 centimeters), rendering the extraction of the shoulders a comparatively easy task. The operation can be done by the use of heavy straight or curved scissors of the Dubois type, two fingers of one hand being used to guide the points to the middle of each clavicle. It is usually necessary to strongly extend or flex laterally the fetal head so as to give more room.

The posterior shoulder is responsible for many deep pelvic floor lacerations and moderate ruptures caused by the passage of the head are often increased by the posterior shoulder. The following method of shoulder delivery will be found very efficient, the patient being either in the lateral or dorsal posture: The delivery of the shoulders is delayed if possible until nearly complete rotation of the bisacromial diameter has taken place. The fetal head is then gently raised well up behind the symphysis, thus having the cervico-acromial diameter of the fetus, instead of the bisacromial at the outlet. The posterior shoulder is now allowed to pass out spontaneously. While the anterior shoulder is detained behind the symphysis, the fetal hand of the opposite arm lying across the fetal chest will usually appear at the vulva. By slowly flexing this forearm and arm the posterior shoulder may often be safely delivered by slight traction on the posterior arm. If this method is impracticable gentle traction on the head, the fingers encircling the neck, is preferable to traction with a finger in the axilla. If there is delay in delivery of the anterior shoulder, traction should be made directly downward, care being used not to make too great pressure on the perineum. As a last resort traction may be made by a finger in the axilla.

A. P. R.

PEDIATRICS.

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DIAGNOSIS AND DRUG TREATMENT OF PNEUMONIA.

Doctor Louis Fischer (*Medical Record,* April 10, 1904) says pneumonia is an acute infectious disease caused by the invasion of the pneumococcus. It is transmissible, and our first duty, therefore, is to isolate the case. The diagnosis is often difficult, especially in the central pneumonias. Temperature alone is useless as a guide as children have a rise of temperature from slight disturbances. The important diagnostic point is the disturbance of the normal pulse and respiration ratio. A child in health has one respiration to every four pulse beats, and when pulmonary disturbance is present this normal ratio of one to four is usually one to three. The physical signs heard in a central pneumonia are of little value. Young children rarely cough and never expectorate the rusty sputum, so these symptoms are of no diagnostic value. The treatment advised by the author is fresh air and sunlight; temperature of room 68°–72°; eliminating the toxins through the skin, kidneys and bowels; controlling the temperature by moderate doses of aconite; and sponging the surface with alcohol and tepid water or the application of the cold pack. In ministering to the bowels the author prefers citrate of magnesia as it has also a dieuretic action. A most important part of the treatment is the nutrition. Strength should be supported by proper feeding. It should be more dilute than that given in health and be administered at longer intervals. It is a mistake to be continually disturbing a child suffering from pneumonia for in many cases rest is as important as fresh air and food.

OPHTHALMOLOGY.

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OCULAR LESIONS CAUSED BY LIGHTNING STROKE.

Gonin (*Ann. d'Oculistique,* February, 1904) gives an account of a patient struck by lightning, who shows superficial opacities of the cornea, swelling of the face and ciliary injection. Four days after the accident a posterior opacity appeared in the left lens, which showed a tendency to disappear, at the end of several weeks, when opacities developed in the anterior cortex of the right lens. Both optic nerves were partially atrophic, vision being reduced to one-third in the right and one-sixth in the left. He collects the literature of twenty-two cases, in nineteen of which cataract appeared; in eight cases there was atrophy of the optic nerve, and only two in which the lens was not injured at the same time. The atrophy is usually unilateral, and is a late complication, coming several weeks or months after the accident. The disturbance of the lens is usually accompanied or preceded by more or less fugitive lesions of the superficial parts, lids, conjunctiva and cornea. Almost all the observations show a conjunctival hyperemia, with a certain degree of photophobia or blepharospasm, burns of the eyelash, swelling of the lids and corneal opacity. The corneal opacity often disappears in a short time. Hyperemia of the iris, and even recurring iridocyclitis have been seen ocasionally, and in a few cases motor paralysis, involving the third, fourth or sixth cranial nerves. The motor disturbances are usually cured in a few days or weeks. As-a result of experiments upon animals, made by Hess, Widmark, Silvast, Keribuchi and others he concludes:

(1) The ocular lesions caused by the direct action of electrical discharge upon the tissues of the eye differ from those which result only from the effect of the light from an electric flash or spark.

(2) In the great majority of cases the sole symptom common to them consists in the conjunctival hypermia and the ciliary injection; the diffuse opacity of the cornea, the cataract, the severe lesions of the fundus and the motor paralyses are the consequences of the electrocution.

(3) The lesions resulting from the electrical discharge may be ascribed to a mechanical action of the current upon the integrity of the histologic elements and upon the cohesion of the ocular tissues, as well as to the electrochemical phenomena developed by the current.

LARYNGOLOGY.

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HYPERTROPHIC TUBERCULOSIS OF THE LARYNX.

Clement F. Theisen (*American Journal of the Medical Sciences*, November, 1903) carefully reviews this comparatively rare condition in the larynx. He cites a case, which finally died of tuberculosis, wherein the early diagnosis was difficult. It was variously diagnosed as pachydermia laryngis, syphilis and tuberculosis. He mentions the diagnostic points to differentiate this form of tuberculosis from other conditions. He believes alcohol and tobacco to be the two most important factors in producing pachydermia. Ulcerations occur frequently in pachydermia He says: "We may exclude pachydermia when the characteristic circumscribed hyperplasia of the ventricular bands or other parts of the larynx is present; when we do not get a history of excessive drinking or smoking; when syphilis can be excluded; when the depression on the pachydermic node is absent, and all other factors that would cause a chronic laryngitis can be excluded." It is more difficult to make a diagnosis when carcinoma develops, or coexists with an apparent condition of pachydermia.

The author makes the following classification: (1) Cases in which the characteristic changes in the lanynx consist of either a marked hypertrophy, or hyperplasia of the tissues, or in which tumor-like formations without ulcerations occur. (2) Distinct tumors, usually covered with intact mucous surfaces and called by the French the "type d'Avellis," which seem frequently to originate in the ventriculus Morgagni. These tumors may or may not be pedunculated. Climatic treatment is specially urged. His conclusions are: (a) Hypertrophic or hyperphastic tuberculosis of the larynx must be considered a distinct and unusual form of the disease. (b) As a rule, there is not ulceration, but there may be some late in the course of the disease. (c) Ulceration may be present at the same time as the hyperplasia of the tissues in some part of the larynx, but the characteristic circumscribed hypertrophies and tumor formations do not break down. (d) It is practically always secondary to the pulmonary involvement but there appears to be some evidence in support of the statement that practically this form of tuberculosis may be primary.

LARYNGEAL STENOSIS FROM POST-TYPHOID PERICHONDRITIS, TRACHEOTOMY, THYROTOMY, INTUBATION.

Ewing W. Day and Chevalier Jackson (*Annals of Otology, Rhinology and Laryngology*, March, 1894) describes two cases, both in convalescent typhoid patients. The second case also developed acute purulent otitis media which required a mastoid operation. Tracheotomy, thyrotomy and intubation were practiced in both cases. The final results were satisfactory. He advocates the use of the intubation tube rather than allowing the trachea to remain open, for the following reasons: (1) on account of its safety from pulmonary risk, especially in going out of doors in cold or dusty weather; (2) on account of its needing cleaning only once every month or two, if at all; (3) on account of its enabling the use of the whispered voice, without blowing foul air from a tracheal wound into the listener's face, or stopping the canula with the fingers; (4) except for the whispered voice, the patient goes about among his fellow-men without feeling like a freak of nature in breathing through a hole in his neck; (5) a tracheal canula is a very annoying and uncomfortable thing to wear with its granulations, pus and nastiness requiring a dressing that interferes with the wearing of a collar. An intubation tube after a few weeks becomes perfectly comfortable, the patient not being aware, from any sensation, that it is there, just as with artificial teeth; (6) and by no means the least important, is the matter of health. No patient can enjoy a full degree of health while wearing a trachea canula, whereas an intubation tube is no detriment whatever.

PIPE SMOKERS' ULCER OF THE HARD PALATE.

Aldolph Rupp (*Laryngoscope*, March, 1904) calls attention to this rather unusual condition. His first case occurred in a clergyman, about fifty-five years of age, and an intemperate pipe smoker. His history was negative, except that there was a chronic ulcer on the hard palate, which had been diagnosed as cancerous. The appearance was as follows: An irregular, somewhat elliptical, ulcer on the hard palate, opposite the second molar tooth, about one-half inch long and a little less in width, to the right of the middle line of the right half of the hard palate. The floor of the ulcer was clean, had a hard grayish-white appearance, and of a fibrous consistency. When penetrated to the bone, the bone beneath felt normal and hard and smooth. The edges of the ulcer were red and vascular, and bled when meddled with. The surrounding mucous membrane was edematous or infiltrated, smoky or pearly in appearance, and shaded off into healthy mucous membrane. From the border of the ulcer striæ of congested capillaries extended to the second molar tooth, and toward the soft palate. Suction, incidental to the act of swallowing, gave rise to slight bleeding from the edges of the ulcer. No pain was complained of in the ulcer region. The patient stated that during the last five or six years he had noticed ulcers develop in the region of the present ulcer, at different times, and that they had always healed when he stopped smoking his pipe for a time. The present ulcer, however, had persisted for several months, although he had given up smoking his pipe, and despite *x*-ray and other treatment.

The second case was in a hardy mason, fifty-three years of age. He smoked the stub of a clay pipe constantly during the day. The ulcer was on the hard palate, opposite the right canine tooth.

The location of the ulcers was determined by the manner the short pipe stems were held in the mouth. The treatment is hygienic and local.

PSYCHIATRY.

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CARE OF WEAK-MINDED CHILDREN.

HENRY RAYNER, M. D. (*Journal of Mental Science,* July, 1904) writes on the need of care of weak-minded children in infancy and childhood. He says that while the need of this care has been increasingly recognized in recent years, as yet it is but little developed. He emphasizes the importance of the first seven years of life and brain development. In that period the brain considerably more than doubles its weight. The brain growth from infancy to the end of the seventh year is about seven times as much as that which occurs after that year. As important as this growth is much more important is the development of the brain cells.

The defective brain at this period of life is often accompanied by imperfect digestion, assimilation, weak muscular system, low temperature, poor circulation and deficient secretions. The retarded development of the digestive organs make the child suffer from the effects of unsuitable food which produces irritation and excitement manifested by restlessness, crying, screaming and in those of specially unstable nervous system sometimes by epileptic attacks. He dwells especially on the necessity for strict attention to all the physiological functions in children of this character. Particular attention should be paid to the teeth as they are especially apt to decay. Pure air by night and day is strongly urged. Breathing exercises are recommended as far as possible to carry them out. The habit of nasal and deep breathing should be taught and established whenever possible. Adenoids must be removed or cured and mouth breathing prevented. The muscular system demands careful attention and rubbing and passive exercises are recommended. The vigor of the circulation must be as carefully developed as possible as much depends upon the strength of the heart.

Doctor Rayner takes the ground that very much can be done for these children by systematic attention throughout childhood and that if not given at this critical period of life much of the improvability which may be gained in the vast majority of cases is lost. The child must be trained in habits of cleanliness and decency and this can hardly be commenced too early. The mothers, if ignorant, must be shown the proper methods of procedure. In cities where district nursing is in vogue assistance and suggestions from trained nurses will often be of much value. Nurses who have been trained in institutions for feeble-minded will ordinarily accomplish more than those who have not had the benefit of such experience.

Doctor Rayner believes that by early, systematic and persistent attention along these lines during infancy and early childhood many children, if it were later found necessary to send them to schools for feeble-minded, would come in a condition much more favorable for treatment and that many would be so much improved that they need not be sent to such schools but could be properly dealt with in the special classes for backward children to be found in the ordinary city schools.

THERAPEUTICS.

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THE ANTISEPTIC TREATMENT OF TYPHOID FEVER.

Leighton Kesteven, M. D., of Australia, in the June number of the *Therapeutic Gazette,* extolls the value of eucalyptus as an antiseptic in the treatment of typhoid fever.

Doctor Kesteven states that he has employed this drug as a remedy in the treatment of the disease referred to since 1881, and that as a result the rate of mortality in his cases has been reduced practically to *nil.* He says he does not consider that eucalyptus destroys the germs in the circulation, but he feels certain it does diminish the putrefactive and fermentative changes in the intestinal tract, that it sterilizes the stools and affords relief to the local manifestation of the disease in Peyer's patches and in the small intestines generally.

He also claims that the drug possesses distinct antipyretic powers and that its action in this respect is of greater permanency than that of quinin.

In addition he says: "I have no hesitation in claiming for eucalyptus that it gives by itself greater relief to all the general symptoms of typhoid fever—such as tympanites, tormina, leathery-brown tongue, bloody sordes, dry skin, et cetera—than any other drug which has ever been used, and reduces the hardness and rapidity of the pulse without lowering the general strength."

The duration of the disease under this treatment is given at from fourteen to twenty days. The minimum dose of the drug is ten minims. This can be increased to thirty minims with safety.

Any oil of eucalyptus can be used but the doctor thinks eucalyptol of little or no value. The diet given is that usually directed. Complications such as hemorrhage are declared to be extremely rare.

EDITORIAL COMMENT.

THE ETIOLOGY OF CANCER.

In reviewing, recently, for this journal, the important work of last year referring to the investigations of the cause of malignant tumors the statement was made that the present trend of thought was away from the parasitic theory and toward a biological or embryological conception of the causal factors underlying these disease-processes. Since then there have been published several interesting and important papers bearing out this statement, and the problem has been shifted along more definite lines of research than were before possible. The idea that the essential feature in malignant neoplasms is a transformation of normal adult cells into modified sexual cells is not wholly a new one, and must have occurred spontaneously to many workers in pathology.

* * *

The recent investigations of Farmer, Moore and Walker have, however, given this theory a new impulse. The character of the mitoses in malignant growths has received especial attention for some time. Hansemann in particular emphasized their atypical nature, and the presence of numerous mitoses in association with abnormal forms of mitotic division has been regarded by many as of great importance in the differential diagnosis of malignant tumors. The observers above named assert that the essential feature of malignancy is the occurrence of mitoses with ring chromosomes similar to those found in the heterotype division seen in spore mother cells of plants and in spermatocytes of animals, and further resembling these in possessing only half the number of chromosomes characteristic of the mitoses of the somatic cells. Malignant tumors are, therefore, essentially reproductive tissue arising in abnormal situations, and such tissue is possessed of the same independence of growth as are the cells of the mammalian testis. The causes of such a reversion to cells of the sexual type are not known, and the ultimate "Anstoss" to malignancy must still be sought. It must consist, however, in some essential change in cell-vitality, and it is not probable that parasites can have any part in this.

* * *

Bashford and Murray ("Report of the Imperial Cancer Research Fund") have confirmed the important observations of the workers mentioned above, and have added much of value regarding the zoölogical distribution of cancer. They have established the occurrence of cancer in all domesticated animals and in many other vertebrates, its presence in the warmer-blooded birds and in the colder-blooded fishes having been definitely ascertained. The clinical, pathological, anatomical and histological characteristics are the same in all animals, even in those most remotely related. The great differences in environment of such animals show, therefore, that external conditions such as food, climate, et cetera, can play but little part in the etiology of cancer, and that the causal factor must be sought in the processes of cell-life. In both carcinoma and sarcoma the essential characteristic was found to be a complicated sequence of cell changes similar to that which initiates the origin of the sexual generation in plants from the asexual and which is terminal in the history of the sexual cells in animals. All the cells of the malignant tumors do not undergo the reducing division; a certain number differentiate in the direction of the tissue from which they have arisen. Somatic mitoses occur both in the growing periphery of the primary as well as in the secondaries. Transplantation of cancer from one animal to another of the same species was successfully performed in the case of mice. The new tumors developing at the site of inoculation arise from the cells introduced, the tissues of the new host not participating in the formation of the new cancer-parenchyma, the process being in no sense an infection. Transplantation is identical with metastasis occurring in the original individual. The new growth may attain a size equal to or greater than that of the affected animal. The writers conclude that cancer is an irregular and localized manifestation of a process otherwise natural to the life-cycle of all organisms. New growths are, therefore, devoid of a specific symptomatology.

* * *

Kelling, of Dresden, at this time advances a more fantastic theory, holding that malignant tumors are due to the parasitic action of foreign embryonal cells that may gain entrance to the body in raw or imperfectly cooked eggs, in the eggs of fishes or insects, in the food or drinking water or through the bites of insects. He, therefore, inoculated fourteen dogs with a small amount of a suspension of hens' eggs in physiologic salt solution. Seven of the animals were killed in the course of several weeks and in five malignant tumors are claimed to have developed. He has also applied the biologic specific test for albumin to the study of carcinoma and claims to have demonstrated the presence of hen albumin in connection with human albumin in two cases of carcinoma of the pylorus. He regards the biologic test as strong confirmation of the assumption that the two women afflicted with pyloric cancer had embryonal hen flesh in their tumors. He states further that aberrant embryonal cells of auto-origin may give rise to a tumor of benign nature. Malignant tumors are due to foreign embryonal cells. Kelling's paper reads somewhat like a scientific joke, and is calculated to elicit whimsical applications of the theory propounded.

A. S. W.

CONTEMPORARY.

IS THE PNEUMONIA MORTALITY INCREASING?

[MARYLAND MEDICAL JOURNAL.]

IF any recent observation in epidemiology has received general assent, it is that the pneumonia mortality has steadily increased during the past twenty years until it now disputes the supremacy of tuberculosis as a cause of death. During the past three or four years the subject has received so much attention in the medical and lay press that the caption to these remarks seems a very much belated inquiry. The mortality tables, if taken at their face value, certainly indicate a tremendous rise in the importance of pneumonia as an agent of death. Health officers who are in the habit of steering by the statistics have accepted the apparent preeminence of pneumonia and hailed it as the new "captain of the men of death." Great is pneumonia, but whether greatness has been achieved by or thurst upon pneumonia is yet an open question. Klebs has shown that the mortality charged to pneumonia has increased only at the extremes of life, while in the important period from ten to sixty years of age the mortality from pneumonia has diminished. As compared with the arch enemy, tuberculosis, whose assaults fall particularly upon the age periods of the highest value, pneumonia cannot inflict equal damage by killing equal numbers, and with this consideration the claim of chieftainship for pneumonia is very distinctly abated.

* * *

That pneumonia contributes largely to the mortality of the aged is no news. That acute pulmonary affections are important factors in the mortality of young children is just as well known. But no thoughtful physician can ascribe to one agent of death all the pneumonias either of the aged or the young, much less all the pneumonias of both the aged and the young. The pneumonia account which has furnished so much excitement includes all the pneumonias which have been certified after the careless fashion of the average physician and pigeonholed under one title by the mortality clerk. A satisfactory analysis of the pneumonia mortality for a period of ten years cannot be made from the published reports of any city or state in the Union. Even the reports of the twelfth United States census, voluminous as they are, and provided with a classification admitting of good differentiation among the respiratory diseases, give no differential statement of the pneumonia mortality. That the figures should yield a spearate account of the group of pulmonary affections usually returned as broncho-pneumonia seems an elementary requisite in mortality accountings, and, fortunately, such statements can be derived from a few published mortality tables. The highest broncho-pneumonia account is that of Boston in the past three years, where broncho-pneumonia constitutes nearly fifty per cent of the pneumonia mortality. The average derived from half a dozen registration reports shows that thirty-three per cent of the mortality charged to pneumonia was returned as broncho-pneumonia. Assuming that the tabulated mortality is in general subject to a discount of thirty-three per cent, we should not by so large a cut eliminate the broncho-pneumonia, for many physicians employ the word pneumonia as equivalent to broncho-pneumonia, but no physician uses the term broncho-pneumonia when pneumonia is meant.

* * *

If it were possible to divide the pneumonia mortality into two parts, of which one would include all the broncho-pneumonia, the other group would still be a conglomerate one, defying analysis. The ignorance and carelessness of certifiers and the incompetence of mortality clerks are not the only factors in the confusion of mortality statistics. The growth and diffusion of medical knowledge have also their influence. The results are apparent in the decline of certain indefinite causes of death. In this connection two sorts of mortality appear to have diminished, namely, convulsions of infants and "senile debility." Very many deaths formerly attributed to convulsions were undoubtedly due to pneumonia, and nowadays the true cause of such deaths is more frequently recognized. At the other end of life we find that the deaths returned as due to senile debility, though somewhat increasing, bears a lesser ratio to the population above sixty. The reported pneumonia mortality certainly receives some accessions from this source.

* * *

"Capillary bronchitis" had unlimited credit a few years ago. Not all of it goes into the pneumonia account at present. The bronchitis of the census bureau includes returns of capillary bronchitis, but the pneumonia estimates have undoubtedly profited by the passing of this misconception.

* * *

There is no doubt that one of the statistical compartments for diseases of the organs of respiration has grown over full of late years, and that the pneumonia returns are in this compartment. But the compartment contains no answer to the question found at the head of this article. Pneumonia may have grown more frequent or more virulent, or both, but the generally accepted view that pneumonia has increased rests upon the ancient basis of many illusions, *"enumerationem simplicem."*

MEDICAL NEWS.

THE DEMISE OF TWO MEDICAL OCTOGENERIANS.

Doctor Nathan Smith Davis died at his home in Chicago, on June 16, 1904, aged eighty-seven years, having been born at Greene, New York, on January 7, 1817. His education, previous to the age of sixteen, was obtained at the district school, his time being divided between farm work in summer and school work in winter. This preliminary equipment was supplemented by a six months' session at Cazenovia (New York) Seminary, and at the age of seventeen he began the study of medicine under the preceptorship of Doctor Daniel Clark. He received the degree of Doctor of Medicine from the College of Physicians and Surgeons of the Western District of New York, January 31, 1837, having attended three courses of lectures. He embarked in the practice of medicine in the Empire State, first locating in Vienna, then in Binghamton, and shortly afterward in New York City. While secretary and librarian of the Broome County Medical Association he manifested considerable interest in the welfare of the medical profession, and during the course of events offered before that body the preamble and resolution which gave him the title of "father of the American Medical Association": *Whereas,* It is believed that a national convention would be conducive to the elevation of the standard of medical education in the United States; and *Whereas,* there is no mode of accomplishing so desirable an object without concert of action on the part of the medical societies, colleges and institutions of all the states; therefore, *Resolved,* That the New York State Medical Society earnestly recommends a national convention of delegates from medical societies and colleges of the whole Union, to convene in the City of New York, on the first Tuesday in May, in the year 1846, for the purpose of adopting some concerted action on the subject set forth in the foregoing preamble. In 1848 Doctor Davis was appointed lecturer and demonstrator of anatomy in the College of Physicians and Surgeons, of New York City, but he resigned this position a year later to accept the chair of physiology and pathology in Rush Medical College, of Chicago. In addition to teaching these subjects he assumed, the following year, the duties of the chair of practice of medicine, which position he filled for a decade. He was one of the founders of the Chicago Medical College, in which institution he was for more than forty years dean, and professor of principles and practice of medicine. He was also one of the founders of Northwestern University, Chicago Academy of Science, Chicago Historical Society, and Illinois State Microscopic Society. He was the author of a work on "Practice of Medicine," as well as many monographs on various subjects, and held active and honorary membership in medical and other scientific societies galore. The doctor occupied the editorial tripod for over a quarter of a century, his first connection with medical journalism being in New York City. In 1855 he resumed the work in Chicago, where he wielded the pen on two journals for twenty years. He was instrumental in founding the journal of the national organization, and became its first editor in 1883, resigning six years later. He was twice elected to the presidency of the American Medical Association, and held various other offices of honor and distinction.

* * *

Doctor Leonard Brooks Parker, of Marine City, Michigan, died at the family residence, June 19, 1904, in the eighty-sixth year of his age, having been born at Moores, Clinton county, New York, July, 29, 1818. He descended from revolutionary stock, and was the fifth child in a family of ten. When he was six years old his parents settled in Fairfax, Vermont, at which place, and at Saint Albans, young Parker received his academic education. He graduated from Castleton Medical College, Castleton, Vermont, in 1843, having previously studied medicine with his preceptors, Doctors Hall and Ballou, of Saint Albans. He embarked in practice at Cambridge, Vermont, where he remained two and one-half years. In 1846 he migrated to Michigan and settled at Marine City (formerly Newport), where he soon acquired an extensive medical practice, which he assiduously attended for fifty-eight years without the intervention of a single day's illness. Some of his surplus energy was devoted to lumber and vessel interests, and after the decline of lumbering he engaged more extensively in marine enterprises and eventually became the possessor of valuable vessel property. He likewise manifested considerable interest in political affairs, and as a democrat represented his district as state senator during the sessions of 1861-2. He served several terms as president of Marine City while it was a village and one term as mayor since its incorporation as a city. For many years he was connected with the board of education, and in 1884, was chosen as a delegate to the national Democratic convention. In 1852 the doctor was married to Miss Jane Sparrow, of Percy, Ontario, who, together with six children (two daughters and four sons), mourn his loss, one daughter having died in early childhood. Two sons are physicians in Detroit—Delos L. and Walter R. Deceased was one of the best known practitioners in Saint Clair county and merited the high esteem accorded by his fellow-citizens.

MINOR INTELLIGENCE.

The New Hampshire State Medical Society decided, at a recent meeting, to donate one thousand dollars to Dartmouth College as a beginning fund for a new medical building.

Five hundred thousand marks were bequeathed to the University of Liepzig by Herr Puschmann, with which to establish a chair of medical history at that institution, and also to further the study of the subject.

THE thirty-second annual meeting of the Canadian Medical Association will be held in Vancouver, August 23, 24 and 26, 1904. Preparations indicate that the meeting will be a successful one.

WASHINGTON UNIVERSITY, of Saint Louis, will erect a new hospital building, of the capacity of one hundred beds, at the corner of Jefferson and Lucas avenues, the site now occupied by the Polyclinic building.

THE following Committee on Medical Education was appointed at the recent meeting of the American Medical Association: Victor C. Vaughan (Chairman), George W. Webster, George M. Kober, Joseph D. Bryant, Charles M. Ellis.

NOAH RABY, a native of North Carolina, is said to have died recently at the advanced age of one hundred thirty-six. An exchange says that his life was shortened by the incessant use of alcohol and tobacco, which he had indulged in from early manhood. The youth of the land should take warning.

THAT members of the medical fraternity make efficient diplomats is evidenced by the fact that Doctor Horace Newton Allen, of Ohio, has been our Korean minister since 1897. The doctor is a graduate of the Cincinnati Medical College, and was in charge of the Korean exhibit at the Chicago World's Fair.

THE rare case of a child born without an abdominal wall is reported from Brooklyn. The intestines and other viscera were simply covered by a layer of peritoneum, the abdominal muscles being absent, from the ensiform cartilage to the pubic bone. At birth the peritoneum was open, and the child eventually succumbed to peritonitis.

THE memory of Professor Yarnier will be perpetuated by the erection of a monument in Paris. Professor Yarnier was a man of many attainments; an extensive writer, and noted teacher, and during the thirty years which he devoted to college work, probably did more to decrease mortality in lying-in women and the newborn than any other man of his time.

PNEUMONIA and tuberculosis have claimed more than one-third of the deaths occurring in Chicago during the past eight months. In the first six months of 1904 more than three thousand persons succumbed to pneumonia, and over fifteen hundred were victims of consumption. Similar conditions prevailed in New York, more deaths, however, resulting from tuberculosis in the latter city than in Chicago.

THE Mexican Government is making a vigorous attempt to exterminate the yellow fever germ. The disease is prevalent more especially in the vicinity of the Gulf Coast, and an appropriation of seven million dollars has been placed at the disposal of the Health Board of Vera Cruz, which will expend a large part of this sum in regulating the sewerage and drainage systems of the city. The municipality is divided into four districts with a medical inspector and several assistants in charge of each.

THE seventeenth annual gathering of the American Association of Obstetricians and Gynecologists will be held in Saint Louis, September 13, 14, 15 and 16, under the presidency of Doctor Walter B. Dorsett.

THE Illinois State Medical Society has in operation a camp for the treatment of tuberculosis patients. At present about thirty persons can be accommodated and the management hopes that the project may be self-supporing.

CONGRESS has passed a bill regulating the practice of medicine in Indian Territory. A medical examining board in each district, consisting of three qualified physicians to be appointed by the district judge, is provided for in the measure.

NINETEEN nurses were recently graduated from the State Hospital for the Insane at Trenton, New Jersey. The event is noteworthy in that all the candidates were trained especially to nurse the insane, and will be retained for duty at that hospital.

IN the libel suit of Arthur MacDonald against the New York *Sun* the jury rendered a verdict of $20,000 for the plaintiff. The suit was instituted to determine whether MacDonald, as a scientist, was sincere or whether he was using his knowledge as a means of deception.

THE birth rate in Germany during the past several years has shown a gradual decrease. During the period between the years 1870-1880 the rate for every one thousand inhabitants was 40.7, while between theyears 1890-1900 a decrease of 3.3 per one thousand persons is shown.

DURING the year 1903 more than eight thousand anesthetics were administered at Saint Bartholomew's Hospital, London. The students in attendance at the medical school in connection with the hospital are given a compulsory course in anesthesia, and each receives practical instruction in the subject.

A VERDICT for $12,666 was awarded recently, in Saint Louis, to Doctor M. P. Morrell in his case against Doctor J. J. Lawrence, editor and proprietor of the *Medical Brief*. The suit was instituted to recover $16,000, alleged to have been due since July, 1902, for treatment of a son of Doctor Lawrence, who died in that month.

THE Dashiell Bill, which required persons contemplating marriage to appear before a physician and receive instruction such as would obviate the bearing of weak and defective children, was recently defeated in the legislature of Iowa by a unanimous vote. The bill was crushed on the ground that it was against the principles of liberty and the pursuit of happiness.

DOCTOR RYDYGIER, a son of Professor L. Rydygier, was sued recently by an attendant at the University Clinic at Lemberg, the complainant averring that, owing to *x*-ray experiments conducted on him by the doctor, he had sustained permanent disabilities. The court awarded damages to the extent of twelve hundred and fifty dollars, besides allowing the victim a small life pension.

CINCINNATI is suffering from a siege of typhoid fever, over sixty new cases having been reported during the last week of June. In one ward of the City Hospital containing fifty patients, twenty-four were victims of typhoid.

THE sixth annual meeting of the Ohio Valley Medical Association will be held November 9 and 10, at Evansville, Indiana, under the presidency of Doctor A. M. Hayden. This society was organized about a decade ago, and has enjoyed a very successful career.

REPORT from London charges the corset with being directly responsible for several cases of cancer which an English physician attributes to friction of the stays against the pectoralis major. The right mammary gland is the one usually affected, this being on the side of the body most used by the average individual.

THE faculty of the Manitoba Medical College has purchased a site upon which to erect the proposed new medical building. The property is three hundred thirty feet front and two hundred sixty-six feet deep. No definite plans have yet been made regarding the erection of the building but it is quite likely that it will be completed before 1906.

AN association has been organized in Washington, District of Columbia, for the purpose of collecting funds with which to erect a suitable monument to the memory of the late Doctor Walter Reed, whose researches on yellow fever have pointed the way to prophylaxis of this disease. Major Reed succumbed to appendicitis in November, 1902.

THE new medical laboratory of Pennsylvania University has just been formally dedicated. The approximate cost of the building, and equipment, exclusive of grounds, is $700,000, and it is one of the most complete of its kind in the United States. The structure is two stories in height and is three hundred forty feet front by two hundred feet deep.

SEVERAL railroad companies in the west have added to their service coaches which are designed especially for tuberculous subjects. The cars will be attached to through trains and none but consumptives will be permitted to travel in them. The idea is as novel as it is practical and should be adopted by all railway systems, which operate in the vicinity of the resorts frequented by tuberculous persons.

A MOVEMENT is being inaugurated among the sufferers of the late typhoid epidemic at Butler, Pennsylvania, which contemplates organizing an association to institute proceedings for damages against the water company of that city. If the scheme should be successful and the owners of the company held responsible for negligence a wholesome effect might be produced on water companies in other cities.

FRANCES POWER COBBE, on of England's most pronounced antivivisectionists, died recently in that country. So intense was her fear of being buried alive that her will contained a clause which provided that before interment the arteries of her neck should be severed. Perhaps her insane whims were not more markedly evidenced through life than in her last request, which was complied with by her executor.

AUSTRIA is now practically free from smallpox, the law regarding vaccination being vigorously enforced. A compulsory school attendance law exists in that country, but since the children are required to be vaccinated, the disease has gained very little headway.

A SANATORIUM for the treatment of curable cases of tuberculosis, has been recently opened in Denver. The buildings are located on a site five thousand feet above sea level, and possess ample grounds, the conditions being ideal for the treatment of such cases.

TEN thousand dollars of the Henry Phipps donation to Johns Hopkins Hospital will be expended in erecting a dispensary for the treatment of tuberculosis. The patients, besides receiving attention at the dispensary, will be visited at their homes, where observation will be made regarding proper hygienic conditions.

HENCEFORTH the signatures of Christian Scientists and Osteopaths on death certificates will not be legal in Cincinnati. Solicitor Scott of that city recently ruled that inasmuch as practitioners of the aforementioned cults were not versed in the principles of medicine, their opinion regarding the cause of death would not be recognized.

THE Chicago Retail Druggists' Association resolved, at a recent meeting, to sell carbolic acid to the laity only on physician's prescription. A fine of twenty-five dollars will be imposed on offending members of the association. The precaution is taken in consequence of the large number of suicides which have lately been due to the drug.

DOCTOR ALBERT VANDER VEER has resigned the deanship of the Albany Medical College, a position he has occupied for many years. Doctor Samuel B. Ward has been chosen to fill the vacancy. The resignation of Doctor Vander Veer was necessitated by a recent enactment which prohibits a regent of the University of the State of New York from serving as dean of a medical college.

AT a meeting of the Michigan State Board of Health, which was held in Lansing July 8, 1904, President Frank Wells in the chair, plans for a proposed addition to the dining room building and a new cottage at the Home for the Feeble-Minded at Lapeer; also plans for a proposed new Metallurgical Building at the Michigan College of Mines at Houghton, were presented for examination by the Board and recommendations were made for their improvement.

THE annual report of the New York State Commission of Prisons, recently presented at Albany, imparts the information that during the past year there were 28,519 commitments to the jails and 3,615 to the penitentiaries, making a total of 32,134 incarcerations for the single offence of drunkenness. During the same period the total commitments for all offences were 102,581. Notwithstanding the fact that nearly one-third of all commitments were for intoxication, the report urges that this offence should not be treated strictly as a crime, and says: "Drunkenness has in it no element of malice—one of the usual and necessary elements of crime. Habitual drunkenness arises largely from mental weakness, and its treatment should partake of the characteristics which the state has deemed wise to use in other cases of mental aberration. There is a large distinction between the man who cannot control his appetite for drink and the man who wilfully and maliciously commits an offence against the person or property of another. The law should recognize this distinction. The present practice of sending him to jail or to a penitentiary, branded as a criminal, to consort with thieves, only depraves and discourages him, and at the same time inflicts punishment and privation upon his family. Some wiser method of dealing with this offence should be ascertained and adopted." Apropos to the question of drink the Russian Government has offered a prize equivalent to about $25,000 for the discovery of some process for making alcohol undrinkable.

THE Southern Surgical and Gynecological Association contemplates the erection of a memorial to the late Doctor William E. B. Davis, of Birmingham, Alabama. The remembrance will be in the form of a statue of bronze, seven and one-half feet high, and mounted on a granite pedestal, nine and one-half feet high. The society will endeavor to have the monument completed by December 1, so that the unveiling may take place at the meeting of the society, which occurs in that month.

RECENT LITERATURE.

REVIEWS.

BOOKS ON DIAGNOSIS.

THE appearance of a number of new books and new editions on diagnosis seems to indicate an active demand for this kind of literature. While accident doubtless plays a part in the event, it seems that publishers are beginning to take a greater interest than formerly in works on diagnosis and this we assume is the result of discovering that medical students and physicians use such books more than they did a few years ago.

* * *

MANUAL OF CLINICAL MICROSCOPY AND CHEMISTRY.*

Professor Lenhartz' book is a good one of its kind, and the editor and publisher deserve the thanks of readers who are not able to use the original for making it accessible. The methods are well selected and clearly described, the translation smooth. Within a small compass the most important details of chemical and microscopic diagnosis are given. The plan of the book, however, is one that is fortunately antiquated. It is no longer necessary for the student of diagnosis to have in his text-book descriptions of the microscope and elementary directions for using that instrument. He may learn these things in an earlier part of his course. So, too, the elements of bacteriology are usually mastered before the student goes on to the study of clinical bacteriology, and the present-day student requires more than one book to furnish him with the data needed in bacteriology alone. For those who wish to traverse these various fields for the first time the present volume will be of distinct value, but it will be disappointing unless its necessary limitations are recognized. Those who look for the latest additions, such as the so-called biologic test for blood, the importance and methods of investigation of oxybutyric acid in the urine (even diacetic acid is not mentioned) will be disappointed. Discussions of uncertain points, as peptonuria, are usually not present.

While the work of the editor is for the most part well done, there are some errors of fact, as in giving sodium nitrate instead of nitrite in the diazo test, or of translation, as in the legend "a Corpora Oryzoidea." It seems strange, too, that in the examination of urine sediments he directs that the urine be spread out thin, since this lessens the value of the method in proportion as the student follows the directions. We find it better to deposit the sediment from the pipette in a series of drops, so that not only can one see a much greater amount in each field, with the low power, but if the high power lens be needed it can easily be used over a cover glass let down on the particular drop to be examined.

The mechanical execution of the book is excellent.

*Prepared for the Use of Students and Practicians of Medicine. By Doctor Hermann Lenhartz, Professor of Medicine and Director of Hospital at Hamburg, et cetera. Authorized translation from the fourth and last German edition, with notes and additions, by Henry T. Brooks, M. D., Professor of Histology and Pathology at the New York Post-Graduate Medical School and Hospital; Member of the New York Academy of Medicine, et cetera. With 148 illustrations in the text and 9 colored plates. Pages xxxii-412, octavo. Bound in extra cloth. Price, $3.00, net. F. A. Davis Company, publishers, 1914-16 Cherry Street, Philadelphia.

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A MANUAL OF CLINICAL DIAGNOSIS.*

Doctor Simon's book is so well known that detailed description is not necessary. The present edition is materially changed from preceding ones and is correspondingly more valuable. Perhaps the greatest change is in the Chapter on Blood, in which the principles underlying blood pathology, the methods of examination and the clinical findings in various diseases are described with admirable clearness and accuracy and with sufficient fullness for the purpose. In the other chapters the modifications are not so marked, but careful revision has been applied throughout, and the latest methods and discoveries have been incorporated. Many references have been added to articles of value in recent periodic literature and will be welcome to those who wish to learn more about a method or an observation than can usually be given in a book well adapted for technical use as this one is. We warmly recommend Doctor Simon's book to all who wish to have access to the latest knowledge on the various aspects of laboratory diagnosis.

*By Means of Microscopical and Chemical Methods for Students, Hospital Physicians and Practitioners. By Charles E. Simon, M. D., Baltimore, Maryland. Fifth edition, thoroughly revised and enlarged. Illustrated with 150 engravings and 22 plates in color. Lea Brothers & Company, Philadelphia and New York, 1904.

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MEDICAL DIAGNOSIS.*

Von Leube's Diagnosis has long been favorably known to all who have studied in German clinics. There it is universally used, and the fact that it was not long ago translated has seemed to the reviewer one of the curiosities of medical literature. "Leube" represents the best German medical diagnostic methods. It is thorough and accurate, based on an extensive and well digested clinical experience, wide command of the literature, deepened and refined by postmortem examinations. Some think it slow because it studiously avoids "snap" diagnosis, and these impatiently object to the emphasis it puts on the difficulties and occasional uncertainties of diagnosis, but those who wish to learn all they can turn to it with confidence in many an obscure case, certain to find help in methods, and usually in details.

It was therefore with pleasant anticipation that we took up the translation, hoping to find it not only translated in words but in thought. It must be admitted, however, that although there are evidences of careful and even enthusiastic endeavor, the result is disappointing. The original is not especially difficult German, but being strongly idiomatic makes it impossible always to give a literal rendering in English. Instead of giving the sense in clear and concise English an attempt has been made at a closeness that is often clumsy, often longer than the original, and not rarely inaccurate. The frequent translation of the article and of such harmless German as "seiner Zeit," "und zwar," "ja," et cetera, is a minor but annoying feature. "Respective" is turned into English without change or by adding "ly" with painful regularity, and "Verhalten" is responsible for such queer expressions as the "conduct of the pulse," "conduct of the gastric mucous membrane," et cetera. These may seem trifling objections, but a somewhat careful reading forces us to think that the number of errors must seriously lessen the practical value of the work.

A few of these may be mentioned in order to absolve us from the charge of captiousness: "Criteria" or "criterion" is chosen for various words having no such meaning, as "Momente," page 126, "Vermuthungen," page 37, "Anhaltspunkte," pages 216 and 876, "Merkmal," page 692, et cetera. "Amylum" (page 256) (starch) is translated "amyl;" "Druesen" (page 257) becomes "duct;" "Vergroesserung" becomes "diffusion" (pages 42 and 43); "Ueberschwemmung" becomes "saturation;" "Blaetter" (of the pericardium) becomes "leaves," several times. When Leube speaks of "Malariagift" it might be supposed that he uses the word "Gift" in an old sense, and not in that of "toxins," as the context makes clear. "Bacilli" for "bacteria," "tubercular" for "tuberculous" may be admitted to be trifling errors; "dichomatous" (page 121) may be a slip of the pen; "xerous" for "xerosis" may be another. But surely there is no excuse for "ichorically" (jauchig, page 251). Zenker's introduction of the term "Pulsionsdivertikel" was unfortunate, but it seems better to follow the usual practice in English and translate the term "pressure" rather than leave it in the original form (page 252) or still worse translate it "Pulsation." "Hepatized" has so long been used in English that it seems needless to give "hepaticized," while "derb," as applied to hepatized lung, seems more properly "tough" than "coarse" as on page 118. "Attenuated murmurs" might more accurately be spoken of as weakened (page 38) and carbol fuchsin is usually decolorized instead of "discolored," as here given. One or two examples of translation of sentences may be given. While it must not be supposed that such examples are numerous, they are much more numerous than one can easily understand. On page 38 we read: "The pulse in the abdominal aorta and in the crural arteries is small, heavy and palpable later than the pulse of the radial artery." A "heavy" pulse is something new. The original says "the pulse —— is small, hard to palpate, and, compared with the radial pulse, delayed." On page 39, it is said of pericarditis: "as the inflammatory fluid is prevented in part from flowing down the heart itself," though a more natural rendering gives: "because the exudate is partly prevented, by the heart itself, from running down." A few other examples show apparent haste, rather than anything else: Page 257, "Peptic digestion is also impeded by salts and by alcohol; pepsinogen, the same as pepsin, is not resistant to the latter, and that still less so than pepsin." Page 94: "Besides in capillary bronchitis, the spirals are found in various other processes." Page 41: "Whatever else is observed in the picture of pericarditis are subordinate factors," et cetera.

It is to be hoped that a speedy and thorough revision may be possible, so that the work may meet the wide use it deserves. The mechanical execution is good on the whole. The colored plates are not quite equal to those in the original. G. D.

*Special Diagnosis of Internal Medicine. A Handbook for Physicians and Students. By Doctor Wilhelm von Leube, Professor of Medicine, and Physician in Chief to the Julius Hospital at Wuerzberg. Authorized translation from the sixth German edition, edited, with annotations, by Julius L. Salinger, M. D., late Assistant Professor of Clinical Medicine in the Jefferson Medical College, and Physician to the Philadelphia Hospital. With five colored plates and seventy-four illustrations in the text. New York and London: D. Appletion & Company, 1904.

TULEY'S EPITOME OF PEDIATRICS.*

THIS little book is a good one of its kind. We cannot imagine any other purpose for it than as a refresher of the memory. Though its statements are as a rule accurate they are so brief, and, relative to the subject, so incomplete, that they excite the wish for a larger work.

*A Manual for Students and Practitioners. By Henry Enos Tuley, A. B., M. D., Professor of Obstetrics in the Medical Department of Kentucky University, Louisville, Kentucky. In one 12mo volume of 266 pages, with 33 engravings. Cloth, $1.00, net. Lea's Series of Medical Epitomes. Lea Brothers & Company, Publishers, Philadelphia and New York, 1903.

PROGRESSIVE MEDICINE.*

"PROGRESSIVE MEDICINE" for June contains a résumé of the most important achievements of the year in the surgery of the abdomen, including hernia, gynecology, diseases of the blood, diathetic and metabolic diseases, diseases of the spleen, thyroid gland, and lymphatic system, ophthalmology. Each section is up to the now-too-well-known standard of the work for further comment. After a thorough use of the book in its new form we feel like complimenting the publishers on the paper-cover edition, which is very serviceable and makes the expense very much less. The book is indeed a postgraduate course for the physician who wants to know all that is good in medicine.

*By Hobart Amory Hare, M. D. Lea Brothers & Company, New York.

A MANUAL OF DISSECTION AND PRACTICAL ANATOMY.*

SUCH a work serves a useful purpose in providing the student with a convenient guide in dissection and further in assisting the physician or surgeon in a hasty review of the anatomy of any given region. It is not in any way intended to take the place of a text-book of descriptive anatomy. Gray and Gerrish being used by the majority of students, this manual is prepared for practical use for either. The plan of the book is regional, the landmarks are first given, then the tegumentary incisions and finally the descriptions and relations of succeeding anatomical entities. Such an arrangement makes the book a useful one to those engaged in autopsy work. The tables give evidence of care and attention and the illustrations are numerous and excellent. Since manuals of this kind are undoubtedly at times of great convenience this one may be well recommended.

*Founded on Gray and Gerrish. By William T. Eckley, M. D., Professor of Anatomy, and Corinne B. Eckley, Demonstrator of Anatomy in the Medical and Dental Departments of the University of Illinois. In one octavo volume of 400 pages, illustrated with 220 engravings, 116 of which are colored. Cloth $3.50, net. Lea Brothers & Company, Publishers, Philadelphia and New York.

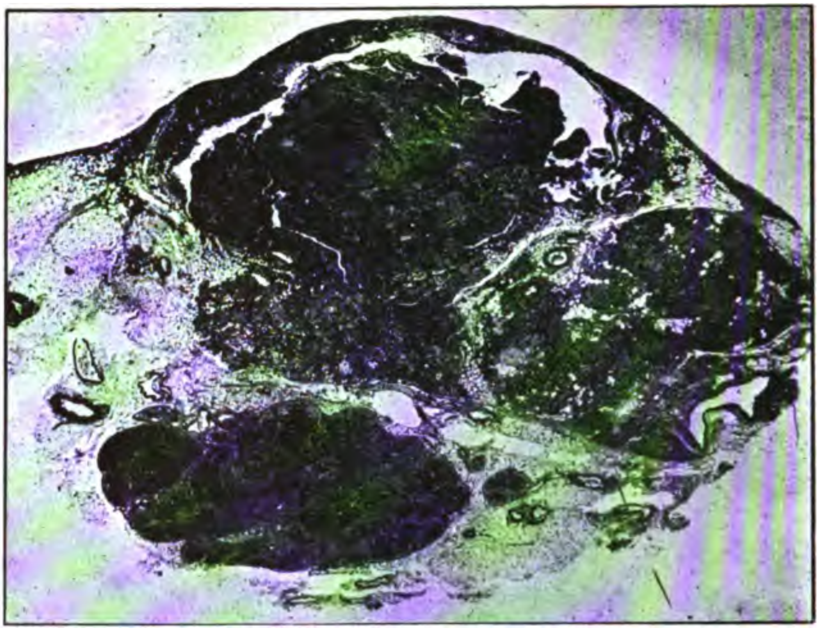

FIGURE I.—Low-power view of omental body (Case I). At the upper part is the chronic abscess cavity, at the middle right the accessory pancreas, and below the hæmolymph node.

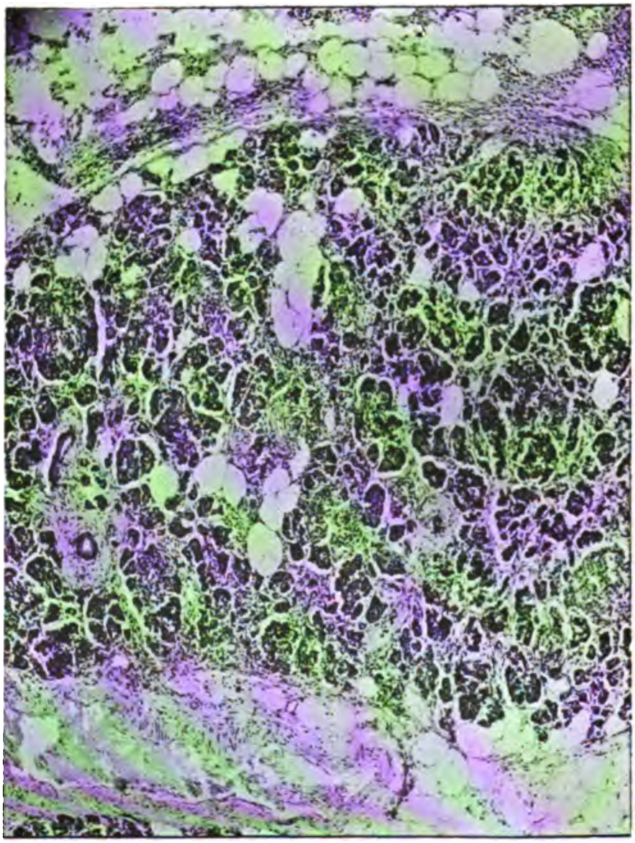

FIGURE II.—Portion of accessory pancreas of the great omentum, showing increase of intralobular stroma, islands of Langerhans, et cetera.

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ORIGINAL ARTICLES.

MEMOIRS.

TWO CASES OF ACCESSORY PANCREAS (OMENTUM AND STOMACH).

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GLINSKI, in 1901, writing of accessory pancreas, was able to collect from the literature but thirteen cases of this anomaly. Although missing a few of the reported cases Glinski was certainly justified in his view that the occurrence of a true accessory pancreas (*Pancreas accessorium*) was very rare. At the present date, but three years since Glinski's article, I find in the literature forty-seven recorded of true accessory pancreas, and am now able to add two more cases, bringing the number to forty-nine. This rapid increase in the number of observations of this condition leads naturally to the suspicion that probably, after all, the anomaly is not nearly so rare as it has been regarded. The great amount of attention paid to the pancreas during the last several years, the increased thoroughness of autopsy work, and the more frequent microscopical study of "small things" are probably the chief reasons for the increasing number of observations of accessory pancreas. Still further bearing out the suspicion of a more frequent occurrence of this anomaly is the fact that of the recorded cases the greater number were seen by a few observers; Zenker reports six cases, Letulle five, Opie ten and Thorel seven, more than half the total number, therefore, having been reported by these four writers.

The following cases occurred in the last fifty autopsies in the pathological laboratory in the University of Michigan:

CASE I.—Mrs. S., aged fifty-three, case of splenic anemia from Doctor Dock's clinic, University Hospital. (Reported as Case II, by Doctor Dock and myself, *American Journal of the Medical Sciences,* January, 1904.) In the great omentum, about a hand's breadth below the greater curvature of the stomach, there was found a red body about the size of a small cherry, imbedded in adipose tissue, and presenting more prominently on the under surface of the omentum than on the upper. Small areas of fat-necrosis were found in the surrounding fat-tissue of the omentum. The red body was rather soft and fluctuating, and from its general appearance was thought to be a hyperplastic hemolymph node. On section it was found to be made up of three distinct parts, each about equal in size: one a firm whitish, oval nodule, eight millimeters in its greatest diameter, resembling pancreatic tissue; the second a red body resembling a hemolymph node; while the third was a small abscess cavity containing a thick cheesy, brownish, pus-like material. The three bodies were separated from each other by a narrow zone of fat and connective-tissue. In this there were several small areas of fat-necrosis.

The body with the neighboring portion of the omentum was fixed in formalin, imbedded in paraffin, and the sections stained by various methods; hematoxylin and eosin, Van Gieson's, kresyl violet, et cetera.

The microscopical examination showed the three distinct portions to be: (1) pancreatic tissue; (2) a hemolymph node; (3) a small chronic abscess.

(1) The small oval mass of pancreatic tissue presented all the characteristic structure of the main organ, lobules, acini, centro-acinar cells, islands of Langerhans, ducts lined with columnar cells, et cetera. The staining of the acinar cells corresponded with that of normal pancreatic tissue. The interlobular connective tissue was increased, and the collecting ducts small. No large ducts leading from the body could be found. In one part a small duct surrounded by a small amount of glandular tissue ran for some distance into the omental fat, but as the distance from the main mass increased, the surrounding pancreatic tissue became less and less, and finally both it and the duct were lost in the fat. It is possible that this duct represents the remains of a former communication with the stomach. Serial sections showed, however, another small duct leading directly into the abscess cavity, the portion of the duct nearest the latter being somewhat dilated and filled with the same caseous material found in the abscess cavity. There was an increase of the intralobular connective tissue, the picture in some areas being that of an interstitial pancreatitis. No small-celled infiltration and no evidence of an active inflammatory process could be found. Numerous fat-cells occurred throughout the intralobular stroma. The islands of Langerhans were numerous, in part apparently normal, others were small and others showed an increase of reticulum, a few being entirely sclerotic resembling hyaline and obliterated kidney glomeruli.

The small abscess cavity was filled with a caseous mass containing necrosing leucocytes, red blood cells and blood pigment. The inner wall of the abscess consisted of a zone of chronic granulation tissue containing numerous large blood-vessels with very thin walls. The walls of many of these vessels were in direct contact with the caseous material filling the cavity. In the adipose tissue about the abscess there were numerous necrotic fat-cells. The surrounding blood-vessels and lymphatics were greatly dilated. Small collections of leucocytes were present in areas, but no marked infiltration occurred.

The third body, the hemolymph node, showed in its blood-sinuses great numbers of phagocytes containing red blood cells and blood-pigment—an excess of hemolysis similar to that found in the other hemolymph nodes of this case.

Pathological Diagnosis.—Accessory pancreas in great omentum, with duct communicating with chronic abscess cavity. Localized fat-necrosis.

* * *

Case II.—Mr. F., age twenty-two, case of subacute malignant endocarditis of aortic valves with stenosis and insufficiency (Doctor Dock's clinic).

In the anterior wall of the stomach near the greater curvature and five cubic centimeters above the pylorus there was a firm, flattened, slightly nodular mass, nearly square, measuring 2 x 2 x 1 centimeters. It presented somewhat more prominently on the serous side, being completely covered by serosa, and appearing through it as a mottled yellowish body suggesting pancreatic tissue. The mucosa was intact over the body and in the center of the mucosal surface there was a slight depression, in the middle of which there was a distinct papilla having an opening visible to the naked eye and admitting a three millimeter silver probe. Pressure upon the body caused the discharge of a small amount of grayish turbid fluid. An incision was made through the body at the level of the papilla. The cut surface showed whitish bands of stroma enclosing yellowish lobules resembling pancreatic tissue. The entire body was situated in the muscularis between mucosa and serosa and was surrounded by a distinct connective-tissue capsule. This capsule was thickest and most clearly defined over the mucosal and serous surfaces of the body. From the papilla a duct with a thick connective tissue wall passed through the submucosa into the central portion of the body and there divided up into radiating trabeculæ.

The entire stomach was fixed in formalin and a transverse section of the mass, including one-half of the papilla, was imbedded in paraffin, and stained with hematoxylin and eosin, et cetera.

On microscopical examination the body was found to consist of bundles of unstriped muscle separated by lobules of tissue corresponding in every particular to the pancreas—acini, deeply-staining granular cells, centro-acinar cells, islands of Langerhans, ducts lined with columnar epithelium, et cetera. The lobules varied greatly in size, the largest ones being found just beneath the mucosa. A certain amount of connective tissue, in greater or less amount separated each lobule from the muscle trabeculæ. From the main lobules small groups of acini extended between the muscle bundles. The connective tissue of the submucosa and subserosa was thickened, contained large blood-vessels, and formed a fairly definite capsule. At the sides of the body there was not such a well-defined capsule and the muscle-trabeculæ were not at all places separated from the muscularis. At first glance the general picture was that of glandular tissue infiltrating the muscular coats. This impression was increased by some areas in which the acini were few and small and the collecting ducts stood out most prominently in the connective tissue between the muscle bundles, resembling greatly an adenoma malignum. The character of the tissue excluded positively the presence of any neoplasia. In many of the small lobules of pancreatic tissue the intralobular reticulum was more abundant than in the normal pancreas. The islands of Langerhans were numerous in some sections, in others relatively few were seen. Though somewhat below the average size they presented no especial changes. The collecting ducts were chiefly small and showed no dilatation. Their lumina contained fine granules staining pale pink with eosin. Converging toward the center of the body they united to form the main duct, which surrounded by more abundant connective tissue pursued a tortuous course through the submucosa to the papilla. The gastric mucosa over the pancreatic nodule was somewhat atrophic and showed some increase of stroma (chronic atrophic gastritis). This atrophy of the mucosa was more marked in the depression about the papilla and over the latter. Here also the cells of the gastric glands were swollen, clear, and for the greater part without nuclei, the acid-cells alone retaining their usual staining powers. The appearances suggested a liquefaction necrosis or a digestion of the gland cells, particularly of the chief cells. The inner surface of the papilla was covered with atrophic gastric mucosa, and the collecting duct as far as the submucosa was lined with gastric glands containing parietal cells. The chief cells were in a condition of hydropic degeneration or liquefaction necrosis, the parietal cells standing out prominently in the clear background. In its passage through the submucosa the main duct lost its gastric epithelium and became lined with columnar cells. Small groups of pancreatic acini occurred here in its wall, just beneath its epithelium. An increased number of wandering cells was seen in some parts of the pancreatic lobules, but no small-celled infiltration occurred in the muscle bundles. In some of the latter the muscle was atrophic in areas and replaced by connective tissue. A few fat cells were present in some of the pancreatic lobules.

Pathological Diagnosis.—Accessory pancreas in stomach wall with collecting duct opening into stomach.

* * *

ANALYSIS OF REPORTED CASES OF ACCESSORY PANCREAS.

It is worth while to analyze again the previously-reported cases of *pancreas accessorium* in connection with these two new cases, with a view of fixing more definitely the clinical and pathological significance of the condition. In the following table especial attention has been paid to the location of the accessory organ, its histological structure and the evidences of secretory activities as shown by the presence of excretory duct. I have excluded all cases of accessory pancreatic tissue lying near the main organ (*pancreas divisum, pancreas minus*), as well as those cases of probable accessory pancreas reported as doubtful (Cohen), also those cases of adenoma, adenomyoma and myoma of the stomach or intestinal wall that probably represent pancreatic tissue (Quensel, Carbone, et cetera).

REPORTED CASES OF ACCESSORY PANCREAS.

No.	YEAR	REPORTED BY	LOCATION	MICROSCOPICAL STRUCTURE	DUCT
1	1859	Klob	Greater curvature of stomach midway between fundus and pylorus, between serosa and muscularis.	Same as that of normal pancreas.	Numerous small ducts. No excretory duct.
2	"	"	Posterior wall of jejunum.		"
3	1860	Montgomery	Upper part of jejunum, beneath the serosa, 1 inch in diameter.	Identical with that of pancreas.	None.
4	"	"	In the intestinal wall at about the middle of the ileum. Measured ¾ x ⅓ inches.	Contained round and elongated follicles lined by columnar epithelium, resembling Brunner's glands	
5	1861	Zenker	First coil of jejunum close to duodenum.	Identical in structure with that of the pancreas.	Excretory duct opening into intestine.
6	"	"	"	"	"
7	"	"	First coil of jejunum, 16 centimeters from duodenum.	"	"
8	"	"	Two accessory glands, one 16 centimeters, the other 48 centimeters from duodeno-jejunal junction. Both in submucosa.	"	"
9	"	"	In tip of intestinal diverticulum 5½ centimeters long, 54 centimeters above ileocæcal valve. Imbedded in adipose tissue.	"	Duct opening into tip of diverticulum.
10	"	"	Wall of duodenum, 2.5 centimeters from pylorus. Between mucosa and serosa.	"	Duct opening into duodenum.
11	1862	Wagner.	Small intestine.	Not described.	

No.	YEAR	REPORTED BY	LOCATION	MICROSCOPICAL STRUCTURE	DUCT
12	1862	Wagner	Anterior wall of stomach near lesser curvature oval, sharply circumscribed mass 4x5x7 millimeters. Elongated 4 millimeters above mucosa, but entirely covered by latter.	Identical with normal pancreas.	Small ducts. No excretory duct determined.
13	1863	Gegenbauer.	In wall of stomach, near lesser curvature, 2 centimeters from the pylorus. Between mucosa and muscularis.	Resembling normal pancreas.	Excretory duct into stomach.
14	1869	Neumann	In tip of a diverticulum of the ileum, 2.3 centimeters above ileocæcal valve.	Similar to normal pancreas.	Excretory duct into diverticulum.
15	1883	Weichselbaum	In tip of diverticulum in wall of stomach.		
16	"	"	In anterior wall of descending portion of duodenum.		
17	1893	Nauwerck.	Slender body, 9 centimeters long, attached to wall of ileum, 2.3 meters above the ileocæcal valve, at tip of a funnel-shaped diverticulum. Covered by serosa and subserous fat. Possessed a distinct mesentery.	Identical with normal pancreas.	Excretory duct opening into diverticulum in a shallow depression of mucosa.
18	"	Schirmer	In tip of diverticulum of intestinal wall, 115 centimeters above the ileocæcal valve.		
19	"	"	In stomach wall near pylorus, between mucosa and serosa.		
20	1896	Hansemann	In tip of diverticulum of upper portion of jejunum.	Not described.	
21	1900	Letulle (In 200 autopsies.)	In wall of duodenum. Location not definitely stated.	Islands of Langerhans absent. Increase of interstitial connective tissue.	Duct into intestine.
22	"	"	"	"	"
23	"	"	"	"	"
24	"	"	5-6 centimeters below ampulla of Vater. In submucosa.	"	"

No.	YEAR	REPORTED BY	LOCATION	MICROSCOPICAL STRUCTURE	DUCT
25	1900	Letulle (In 200 autopsies.)	5-6 centimeters below ampulla of Vater. In submucosa.	Islands of Langerhans absent. Increase of interstitial connective tissue.	Duct into intestine.
26	"	Nicholls	In wall of beginning of jejunum. Projecting into lumen.	Multiple lobules.	Small excretory duct.
27	1901	Glinski	In upper portion of posterior wall of stomach, 2 centimeters from pylorus, 4.5x3x1 centimeters. In muscularis, mucosa and serosa intact over it.	Identical with normal pancreas.	No duct found.
28	"	Albrecht	In a "Meckel's diverticulum."	Centro-acinar cells and islands of Langerhans.	
29	"	Wright	In the tissue of wall of a congenital umbilical fistula. No connection with intestine.	Identical with normal pancreas. Islands of Langerhans present.	No excretory duct found though believed to exist.
30	1903	Opie (In 1800 autopsies.)	Near lesser curvature, 8 centimeters from pylorus. In mucosa and extending into muscularis.	Identical with normal pancreas, except for greater abundance of connective tissue.	Ducts of considerable size. Excretory duct not determined.
31	"	"	2 centimeters from pylorus, below mucosa of stomach.	Increased connective tissue	Slightly dilated ducts. Excretory duct not determined.
32	"	"	In pyloric valve, projecting into lumen.	2 Islands of Langerhans present.	Numerous dilated ducts. Excretory duct not determined.
33	"	"	Stomach wall 8 centimeters from pylorus, projecting upon both mucous and serous surfaces. Second nodule in pylorus containing ducts lined with columnar cells, but no pancreatic tissue.	Increased interstitial tissue. Islands of Langerhans fairly abundant.	Ducts with wide lumina. Excretory duct not determined.
34	"	"	Three nodules of aberrant pancreatic tissue; one in mucosa of stomach 2 millimeters above pyloric orifice. Two in duodenum, one below the mucosa 9.5 centimeters below the pylorus, the other in the submucosa immediately above the duct of Santorini.	Contain islands of Langerhans. Interstitial inflammation present in stomach nodule.	Contain ducts. Excretory ducts not mentioned.

No.	Year	Reported by	Location	Microscopical Structure	Duct
35	1903	Opie (In 1800 autopsies.)	In mucosa of duodenum 4 centimeters above the papilla of the duct of Santorini. Pancreatic tissue also present in the papilla of the duct of Santorini.	Islands not mentioned. Interstitial inflammation.	Duct opening on surface of mucosa.
36	"	"	External surface of duodenum between stomach and pancreas. Slight elevation of mucosa. Extends through muscle coats.	Islands of Langerhans present. Interstitial inflammation.	Ducts present. Excretory duct not determined.
37	"	"	Wall of duodenum below pancreas. Elevation of both mucous and serous surfaces. In submucosa extending through the circular muscle coat.	Islands not mentioned. Dense stroma invading gland lobules.	Ducts lined by columnar epithelium. Excretory duct not determined.
38	"	"	In submucosa of jejunum 111 centimeters below the duodenum, opposite the mesentery. Pancreatic tissue in bile papilla.	Resembles an adenoma. Contains centro-acinar cells. Interstitial inflammation. Islands not mentioned.	Tubular structures resembling ducts. Excretory duct not determined.
39	"	"	In submucosa of jejunum 4 meters from duodenum.	Ducts resembling those of pancreas. No acini. Dense fibrous stroma.	Excretory duct not determined.
40	1903	Ruediger	In muscular coat of wall of jejunum, 15 centimeters from duodeno-jejunal junction.	Identical with normal pancreas. Numerous small ducts. Typical islands of Langerhans.	Large duct. Opening into intestine not positively demonstrated.
41	"	Thorel	Posterior wall of stomach about two finger-breadths above pylorus. Round firm nodule size of pea.	Tubular canals and alveolar lobules of gland tissue with dark granular epithelium.	Three main ducts opening in common on surface of mucosa.
42	"	"	"	Resembled a tubular adenoma of mamma.	Common duct opening on mucosa

No.	YEAR	REPORTED BY	LOCATION	MICROSCOPICAL STRUCTURE	DUCT
43	1903	Thorel	Two distinct nodules of pancreatic tissue lying in the hypertrophic pylorus ring.	The larger nodule consisted almost wholly of a complicated system of tubules. Small amount of gland tissue. Islands not mentioned. Smaller nodule similar.	One duct opening on surface of mucosa.
44	“	“	Mass 2.8 centimeters long, thickness of little finger, in wall of middle of jejunum. Marked prominence on both mucous and serous surfaces.	Made up chiefly of complicated system of ducts lined by columnar cells. Pancreatic acini but no islands of Langerhans.	Excretory duct followed to mucosa. Opening not determined.
45	“	“	Middle of jejunum. Partly covered by atrophic mucosa. Somewhat smaller than a pea.	Structure of an adenomyoma. No pancreatic parenchyma.	Three excretory ducts.
46	“	“	“	“	Excretory duct.
47	“	“	Two accessory nodules of pancreatic tissue: one in the wall at upper third of jejunum, the second about three finger-breadths from this embedded in the mesenteric fat. The intestinal one 3.2 centimeters long by 1.2-1.8 centimeters in diameter; the mesenteric the size of a two-mark piece and 1 centimeter thick.	Between circular and longitudinal muscle coats. Both identical with normal pancreas. Numerous islands of Langerhans.	No excretory ducts found in either nodule.

Location.—Including the two new cases described above the location of the reported cases would fall as follows:

Wall of stomach	14
“ “ duodenum	12
“ “ jejunum	15
“ “ ileum	1
“ “ intestine (not definite)	1
Diverticulum of stomach	1
“ “ jejunum	1
“ “ ileum	4
“Meckel’s diverticulum”	1
Umbilical fistula	1
Mesenteric fat	1
Omentum	1
	53 (49 cases.)

In Cases VIII and XLVII there were two accessory organs, and in Case XXXIV there were three. The four glands thus reckoned separately make the total fifty-three as given, the number of cases being only forty-nine. The accessory organs are situated, therefore, about one-half above the pancreas and one-half below it. While as a rule located in the neighborhood of the main organ (stomach, duodenum and jejunum), they may be found in any part of the small intestine. In three cases they were found outside of the gastro-intestinal tract (umbilicus, mesentery, omentum). Usually the accessory gland was found in the muscular coats of the stomach or intestine, the muscle-bundles being separated and compressed by the lobules of pancreatic tissue, the nodule sometimes presenting more prominently on the mucous surface, at other times on the serous. In some cases the main mass of the accessory organ was found in the submucosa, and more rarely beneath the serosa. In all cases the mucosa and serosa were intact over the body, though sometimes thinned and atrophic. An especial feature is the location in seven cases of the accessory organ at the tip of a diverticulum (stomach, jejunum and ileum).

Size.—As a rule the body is small, 0.4–1.0 centimeters in diameter, but this size has been exceeded in a number of instances. The largest one described in the case of Nauwerck, in which the accessory organ was nine centimeters long. In one of Thorel's cases it was 2.8 centimeters long, and in another 3.2 centimeters. The one described by Glinski measured 4.5 x 3 x 1 centimeters.

Structure.—In the majority of cases the histologic structure of the accessory gland is said to be "similar to" or "identical" with that of pancreas, and is not described in detail. The presence of islands of Langerhans is mentioned only by Albrecht, Wright, Opie (four cases), Ruediger and Thorel. They were present also in both of my cases. Letulle's claim that they do not occur in accessory pancreatic tissue is therefore contradicted by these findings. The presence of centro-acinar cells is mentioned definitely in but a few of the cases. The resemblance to an adenoma was noticed in several cases (Opie, Thorel). Thorel describes two as having the structure of an adenomyoma with the mamma.

In many of the cases the stroma of the lobules was in excess of that found in the normal organ, the picture being that of a chronic interstitial inflammation. Atrophy followed by fatty infiltration may also be present as in the two new cases reported in this paper. Evidences of inflammatory processes are shown also by collections of small round cells in the stroma or ducts.

Interlobular ducts lined by tall, columnar cells have been found in all cases. In a large proportion an excretory duct communicating with the lumen of the stomach or intestine has also been positively determined. The ducts were often dilated. In those cases in which the pancreatic parenchyma has undergone extensive atrophy the ducts may be preserved and give to the organ the picture of an adenoma, adenocystoma or adenomyoma.

Evidences of Secretory Activity.—With the exception of the gastrointestinal tract little evidence has been adduced as to the secretory activity of these accessory glands. The occurrence of a granular material within the dilated ducts may be taken as indicating some kind of a secretion but the exact nature of such a secretion needs to be shown. In Wright's case the moisture about the umbilical fistula was taken as indicating pancreatic secretion. In my case of omental pancreas the chronic abscess cavity with duct emptying into it and the presence of numerous necrotic fat-cells immediately about it may be taken as evidence of a pancreatic secretion in which the fat-splitting ferment at least was present. In my second case a grayish fluid could be expressed out of the papilla and duct, and the interlobular tubules contained a granular material. Moreover, in this case the necrosis of the gastric mucosa covering the papilla and the depression immediately about it may be interpreted as a postmortem digestion by the secretion coming from the duct. The remaining gastric mucosa did not show such change.

Clinical and Pathological Significance.—Up to the present time the clinical importance of accessory pancreatic tissue remains to be shown. Wright's case is the only one in which the clinical condition may be ascribed to the accessory organ—it is possible that the persistence of the umbilical fistula was due to the secretions of the pancreatic tissue. Next to his case could be placed the omental one described above, in which, although no symptoms were ascribable to the condition, it is probable that the small omental abscess and localized fat-necrosis were likewise the result of pancreatic secretions. Fistula, abscess, fat-necrosis, et cetera, must therefore be placed among the pathological and clinical possibilities of this anomaly. As many of the accessory glands present evidences of inflammation it is very probable that such might be the source of a more widespread or even general infection. The small excretory ducts may become obstructed or invaded by bacteria from the gastrointestinal tract, and the accessory gland thus constitute a primary focus of infection.

Formation of Diverticula.—The association in seven cases of an accessory pancreas with a gastric or intestinal diverticulum is sufficient proof of its causal relation to the latter condition. The continuous traction exerted by the small body, especially during the period of development, or the weakening of the muscle coats at the site of the body, would account for the formation of the diverticulum, the latter factor being most probably of prime importance. The presence in all seven cases of the pancreatic body at the tip of the diverticulum gives evidence as to the manner of formation of the latter. The diverticulum is, therefore, most probably the result of a local weakening of the wall, traction playing a secondary part. The pathological significance of such a diverticulum in general would be that of a Meckel's diverticulum.

Obstruction or Stenosis.—An accessory pancreas of large size might obstruct the intestinal lumen or cause stenosis of the pyloric orifice. It is possible that the so-called hypertrophic condition of the pyloric muscle may in some cases be due to the presence of accessory pancreatic tissue. In Thorel's third case the accessory pancreas was in the hypertrophic pyloric ring, the ring-muscle showing on section a mass of pancreatic lobules and branching ducts extending from the mucosa to the serosa. The presence in the pyloric ring of anomalous ducts lined with columnar cells has been noted by several observers (Opie, Case IV), and it is probable that such represent remains of aberrant pancreatic tissue. In the case of accessory pancreatic tissue of considerable size in the intestinal wall an intussusception might be produced.

Relationship to Adenoma, Cystadenoma, Adenomyoma and Myoma of Gastric or Intestinal Wall.—Small nodules consisting of unstriped muscle and connective tissue are of not infrequent occurrence in the stomach wall. Occasionally one containing anomalous ducts lined by columnar cells is found, or more rarely the nodule presents a picture resembling that of a mammary adenoma.' As transition stages exist between such myomatous or adenomyomatous nodules and those containing pancreatic parenchyma the assumption is justified that the former, in many cases, if not in all, represents accessory pancreatic tissue in which the parenchymatous portions are not developed or have undergone retrograde changes leaving in one case the ducts, in the other the stroma and muscle alone. Thorel so regards the adenoma and the two adenomyomata (Cases XLII, XLV and XLVI) of his group of cases as representing accessory pancreatic tissue. Opie's Case X is likewise an example of such an adenoma, and his Case IX represents a transition stage between pancreatic tissue and such an adenoma-like structure. The tumors described by Cohen, Quensel and Carbone as adenomyoma or adenoma situated near the pylorus or in the wall of the small intestine are probably also to be placed in the class of accessory pancreatic tissue. In Cohen's case atrophic pancreatic lobules were present in a myomatous stroma. In the development of the adenomyoma or myoma from an accessory pancreas the process may be either of the nature of a hypoplasia or of a retrograde change. In the one case the pancreatic parenchyma is not developed, in the latter it undergoes atrophy. An increase of transformation of unstriped muscle may take place from the separated muscle-bundles of the wall, from the blood-vessels or more likely from the muscle of the wall of the collecting ducts.

According to Cordua accessory pancreatic tissue may undergo cystic change and give rise to cysts in the upper portion of the small intestine. Such cases are, however, not reported in the literature, but the possibility of such occurrence may be borne in mind. Cystic dilatation of some of the collecting ducts of a microscopical degree is mentioned (Thorel, et cetera).

Development of Malignant Neoplasms.—It is possible that a malignant adenoma or a carcinoma may develop from the epithelium of aberrant pancreatic tissue; or a myomatous nodule may become sarcomatous. Such an origin for gastric and intestinal tumors remains yet to be definitely proved, but its probability should be borne in mind with reference to future investigations. Such a point of origin for malignant tumors of stomach and intestine may later prove of importance.

Physiological Significance.—In the event of destruction of the main pancreas by tumors, inflammation, et cetera, an accessory pancreas, if present, might undergo compensatory hypertrophy and the balance of carbohydrate metabolism might be preserved so that diabetes would not result, or at most only an alimentary glycosuria. Some years ago the writer suggested that a compensatory hypertrophy of the islands of Langerhans might take place in hepatic disease. Ohlmacher has recently confirmed this view. In the event of an accessory pancreas occurring in a case of hepatic disease the size of the islands in the accessory body would be a matter of interest.

Origin of Accessory Pancreas.—Zenker's explanation of the origin of accessory pancreas as modified by Glinski has been accepted by nearly all writers. The former ascribed the occurrence to an abnormal pancreatic anlage formed near the primitive pancreatic diverticulum and subsequently separated from it by the longitudinal growth of the intestine. If formed before the stomach is differentiated from the duodenum the accessory body might come to lie in the stomach wall, if formed below the main organ it would be carried downwards. Zenker believed in a single primitive diverticulum, but later observers describe three anlage, one dorsal and two ventral, the latter fusing to form the chief portion of the gland and the duct of Wirsung, while from the dorsal is developed the head of the gland and the duct of Santorini. According to Glinski, a failure of an original diverticulum to fuse with the others would lead to the formation of an accessory pancreas, while the separate development of each diverticulum would result in the formation of two accessory glands. The persistence of one of the ventral diverticula should result in an accessory gland carried downwards, while if there should occur a double dorsal outgrowth with the independent persistence of one an accessory gland carried upwards to the stomach should result. In the case of two or more accessory glands in the stomach wall the occurrence of a triple, et cetera, primitive dorsal outgrowth must be assumed. This constitutes the weak point of this theory. It is more probable that accessory pancreatic tissue is formed from lateral budding of the rudimentary pancreatic ducts as they penetrate the intestinal wall, the mass of pancreatic tissue thus formed being snared off and carried by the longitudinal growth of the intestine either upwards or downwards. This more simple explanation is the more satisfactory one, and is not based upon the assumption of complicated embryonic conditions. It further explains the occurrence of isolated pancreatic tissue in the papilla of the duct of Santorini.

It is, however, quite probable that accessory pancreatic tissue may owe its occurrence to other anomalies or disturbances of development, and that the manner of origin is varied. The theory of Endres, that anomalies in the relations of the developing pancreas to the right gastro-epiploic or the inferior pancreatic-duodenal artery may lead to the outgrowth of pancreatic tissue along these vessels, and the subsequent snaring-off and imbedding in the greater curvature of the stomach or the jejunal wall, is also a very reasonable supposition and may account for part at least of the cases of accessory pancreas. On the whole it is safe to regard the accessory pancreas in the same light as the other accessory organs arising from misplaced anlage or portions of anlage, hence analogous to accessory adrenal tissue, et cetera. The mechanism of misplacement may vary in different cases.

Endres' theory would explain the occurrence of the accessory pancreas in the great omentum in my first case. An outgrowth of the primitive pancreas along the right gastro-epiploic artery could be snared off, carried upwards and imbedded in the greater curvature or omentum, and later carried downwards by the latter. Or if formed from a persistent anlage or from snared-off lateral buds and originally imbedded in the wall of the greater curvature beneath the serosa the accessory gland might have been drawn downwards into the omentum and the original communication with the gastric lumen obliterated. As mentioned above the duct running upwards in the omental fat for a short distance may represent the remains of such a communication. After the obliteration of such an excretory duct the small abscess cavity may have been formed as the result of retained secretion, the secretions later passing into it and being absorbed by the vascular wall.

In the last one hundred autopsies performed in this laboratory there were five cases of myoma and adenomyoma of stomach (four) and duodenal (one) wall. If these are to be regarded as representing accessory pancreatic tissue, and counting them with the two cases of undoubted pancreatic parenchyma the anomaly of accessory pancreas has been found in seven per cent of this group of cases.

In conclusion, it may be remarked that while with our present knowledge the clinical and pathological significance of accessory pancreas is very slight, the possibility of such bodies forming points of origin for malignant tumors offers a line for investigation.

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ELECTRIC CURRENTS IN THE TREATMENT OF DISEASE.*

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The application of electrical currents to the treatment of disease has of late years made such rapid progress that it is eminently fitting that every practitioner should have at least a general knowledge of this branch of therapeutics.

The aim of this paper shall be to point out to the general practitioner, the various lines now taken up by the electrotherapeutist and briefly review the diseases or conditions in which the individual modalities are of benefit.

The subject naturally divides itself into the consideration of Static, Faradic, and Galvanic Currents, and that wonderful transformation of electrical energy, called the *x*-ray.

STATIC ELECTRICITY.

This agency was first brought to the attention of medical men about 1750. Many of the diseases now successfully treated were so treated a century ago. To the methods and electrodes of that day we have added only the Leyden jar currents, in 1881. In 1865 Professor Holtz, of Berlin, introduced the first machine available for modern use. In 1893 Mr. Wimhurst substituted straight plates for the stationary round ones, and supplied the machine with an exciter. Professor Ranney, of New York, added the air-tight case, and brought the machine to its present dimensions.

Theory of the Static Current.—The current of the static machine is developed by giving a paper element, attached to a stationary plate, a minute charge, this induces a reciprocal charge on the nearest portion of a directly adjacent revolving glass plate, which by rapid revolution and reaction multiplies the charge to a full load. This theory of development is similar to that of the dynamo. Measurements show that this current has a pressure of about sixty thousand volts and a volume of one-millionth ampere.

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*Read before the Houghton County (Michigan) Medical Society.

Physiological Action.—The therapeutic effect of this current is due to polarization of the nerves and muscles. The concentrated charge of static electrization has a peculiar but unexplained action on nerves and tissues; consequent of this, we find that it acts on the system by

(a) Promoting nutrition of every part it excites.

(b) Producing marked local and general circulatory effects, affecting pulse rate and producing perspiration.

(c) Stimulating the nervous system.

(d) Producing metabolism and tissue metamorphosis recognized by increase of urea excretion.

(e) Causing reabsorption of exudates and material of a chronic nature.

(f) Revulsive action on the skin.

(g) Cutaneous sedative or counterirritant action.

(h) Correcting functional and often relieving organic pains.

As regards apparatus, an eight-plate thirty-inch glass circle machine with electrodes and accessories, chosen from the Wimhurst Holtz type, is the smallest of value for results. It should be driven by a one-third horse power motor, and with us here it requires a mechanical speed regulator, as we have access only to the alternating current, commercially. In connection with the apparatus it may be stated that for artificially drying the case, sulphuric acid in a glass photographer's tray is the best expedient.

With careful attention to details the machine will work every day, rain or shine.

The methods of application of this current are:

(a) Insulation.
(b) Sparks.
(c) Breeze.
(d) Induced current.
(e) Ozone administration.

Insulation may be either positive, negative, or by alternating the potential rapidly in the same sitting.

Sparks are administered by ball electrode, massage roller, et cetera.

Breeze applications may be made locally to any portion of body or by means of a static cage we may make the application general.

Induced current is gained by means of Leyden jars and gives us a current similar to the faradic, only more penetrative and proportionally less painful.

Ozone administration is accomplished by holding a many-pointed electrode near the patient's mouth.

Therapeutics.—This current has a wide range of usefulness therapeutically, which we summarize:

(a) In various forms of muscular pains.

(b) In all neurotic conditions, such as neuralgia, rheumatism, lumbago, sciatica, neurasthenia, insomnia, nervous prostration, mental disturbances.

(c) In hysterical states and allient conditions.

(d) As a general tonic.

(e) In reflex irritation and peripheral neuroses.

(f) In nausea, vertigo, dyspepsia, constipation, chlorosis, anemia and all perversions of nutritive processes, it lends valuable aid to restoring normal function.

(g) In diseases of the scalp—loss of hair, the falling out being due to malnutrition.

(h) It acts well in stiffened, contractured or paralytic muscles, acute or chronic muscular deformities and muscular spasms.

(i) In diseases of the heart both functional and organic it is valuable; especially in cases with cold extermities and want of general vital tone. In such cases it possesses the power to stimulate the production and distribution of animal heat.

(j) In locomotor ataxia it will relieve pain and make the patient generally comfortable. In connection with galvanism it has arrested the progress of the disease in early cases for an indefinite period.

(k) It is valuable in the treatment of chorea.

(l) Useful in epilepsy.

(m) In exophthalmic goiter in relieving certain symptoms.

(n) In treatment of chronic inflammatory and spasmodic diseases such as influenza, phthisis, bronchitis, unresolved pneumonia, asthma.

(o) In gynecology we find it valuable—

(1) To distinguish between hysteria and neurasthenia. In hysteria enormous sparks will be tolerated with but little signs of feeling, while in neurasthenia they would create immediate havoc.

(2) For backache it is without equal.

(3) In disorders of menopause either natural or artificial (that is, brought about by removal of ovaries).

(4) In neuroses and cachexias of puberty—this holds for both sexes.

(p) In convalescence from acute diseases, debilitating fevers, and especially in the tedious slow recoveries it often works magic.

(q) It is invaluable in the infirmities of old age, increasing the sum of vitality.

(r) In headaches of all kinds, especially such in which the quadruplet—dentist, oculist, gynecologist and laryngologist—have all failed to afford relief.

(s) In rheumatoid arthritis.

(t) In obesity we find it of value, not in a direct reduction of weight, but in assisting the patient to tolerate the weight with comfort.

"Static electricity does not attack pathological tissues, destroy new growths, remove superflous hairs, set up an active osmosis, coagulate and dry up blood supply of a vascular naevus, or soften, liquefy and absorb an indurated mass or tumor. On the contrary the local action of static electricity is for the most part limited to the relief of symptoms, while its general action is directed to the treatment of the state of the patient."

THE *X*-RAY.

When we glance at the little, yellow-covered pamphlet, by Professor Roentgen, entitled "A New Variety of Rays," we are certainly struck with its modesty and would hardly dream that it proclaims to the world the greatest discovery of the close of a century.

In it he states:

Paragraph 1.—Take a Crookes' tube, connect with Ruhmkorf coil and you see a fluorescence.

Paragraph 2.—We find that all bodies allow this fluorescence to pass through them, but in a variety of degree.

In such a matter of fact manner the pamphlet proceeds, as though *x*-ray discoveries were every day occurrences, not very important in themselves, still should receive attention long enough to be jotted down, so that in the excitement of the wonderful things of the times we would not forget their existence.

The nature of the *x*-ray is now generally conceded to be an emanation of cathode rays, which, striking an object, throw off corpuscles in the form of these rays.

Apparatus.—For the production of *x*-rays we must have a suitable vacuum tube supplied with an opportunity of receiving proper electrical energy.

The sources of this electrical energy are:

(1) Ordinary voltaic cells.
(2) Storage batteries.
(3) Dynamos direct.
(4) Street currents.
(5) Static induction machine.

The energy received from the static machine is ready for immediate use, while that from the other sources has to be changed or transformed.

For this purpose we have what we call transformers. Types of these are the induction coil, and Tesla coil. In other words, we must have a means by which a current of low pressure is changed into an intermittent one of very high pressure.

Having the energy at hand in a suitable form, it becomes necessary to have a means at hand for converting the same into the emanation called the *x*-ray.

This is accomplished by means of a Crookes' tube properly constructed and exhausted.

The interception of these rays and the making of them visible, is accomplished by means of the fluoroscope, the active part of which is a screen covered with one of certain salts, which possess this property, thus giving us the fluorescent screen.

When it becomes necessary tc record these shadows, we find it can be done by exposing ordinary photographic plates and developing them. This process we call skiagraphy or röntography.

Application.—*X*-rays are of value to us in two ways:

(a) Objectively in what they enable us to perceive by their action on other objects.

(b) Subjectively by an inherent virtue which they possess which allows us of applying them therapeutically.

We shall classify as

(A) Their Mechanical Value.

(B) Therapeutic Value.

(A) Mechanical Value.

(a) In locating foreign bodies, such as needles, pins, pieces of metal, bullets, glass, et cetera, not only when we know they are present, and wish to locate them; but in many cases where we can find no explanation of an existing condition and find these the cause. Interesting work has been done in locating foreign bodies in the eye.

(b) In locating calculi very interesting diagnoses are made, especially with the more powerful apparatus.

(c) In fractures and dislocations. When putting up these injuries with a view to having an *x*-ray examination, bear in mind that iodoform, bismuth and some other metallic dressings are opaque to the rays, also adhesive plasters that have lead as a basis. Furthermore, the splints should be made of aluminum, felt, pasteboard or wood. Plaster of Paris is dense and results through it are uncertain. Water glass splints are good substitutes for this.

The value of *x*-rays in fractures lies in the fact that without anesthetics and handling of the parts, you can make an exact diagnosis as to position, nature and direction of fractures, and in some instances conditions are discerned which would escape the unaided eye.

The study of fractures by this method has brought out the following facts:

(1) Ideal or perfect union is rare.

(2) In all oblique fractures there is more or less of overriding of the broken ends.

(3) In bones that are deeply seated considerable deformity may escape notice.

(4) In cases followed by long continued functional disturbances the *x*-rays invariably show overriding of fragments to a greater or less extent, when manual examination revealed no deformity.

(d) Injuries to epiphyses. The importance of exact diagnosis in this class of cases is clear, as severe deformities often result therefrom.

A certain number of deformities classed as congenital are no doubt due to epiphyseal injuries received during birth.

In this connection the *x*-ray worker will please take notice of Doctor John Polands's excellent work on "Traumatic Separation of Epiphyses."

(e) Bone deformities: Congenital and otherwise. It enables the surgeon to plan beforehand the mode and extent of his osseous operation.

In deformities of the spine it often affords valuable information.

Cervical ribs may be demonstrated and clear up diagnoses.

Dress deformities may be demonstrated and place a new weapon in the hands of advocates of rational dress.

(f) Bone deficiencies especially congenital may be demonstrated and brought to correction.

(g) Diseases of bone and joints. The differentiation of the various inflammatory processes would aid us in saving lives and limbs which have often been sacrificed through errors in judgment.

In periostitis and osteomyelitis the foci of infection are located with certainty.

Acute rheumatism, chronic rheumatic processes, arthritis and arthritis deformans may be distinguished.

In tuberculosis of the bone and joints the seat and extent of infected areas as well as differentiation from other operations are possible. The articulations of a tubercular joint have lost their regularity and appear diffuse, cloudy and sometimes shaggy.

Periosteal sarcoma may be distinguished by fine spiculated trabeculæ that radiate from the surface.

In syphilitic bone gummata shows light shaded foci which are confirmed by their disappearance under potassium iodid. In this connection we might state as a matter of interest that radiographic evidence of absorption of bones and falling in of nasal bones in Peruvian mummies, establish the pre-Columbian existence of syphilis in America.

(h) In osteoplastic surgery the *x*-rays are useful before and after operations.

(i) Mapping of Skin Surfaces will give us record of any local peculiarity. Such a permanent record would be of value in identification of criminals.

(j) In dentistry; dental roots and their position; presence or absence of milk teeth, as well as at permanent teeth; existence of an old root; presence of foreign bodies (fillings, pieces of chisel broken off); extent of alveolar abscess.

Sometimes it is of legal value to determine age of infantile corpse by skiagraphing the teeth. In one case of severe neuralgia the skiagraph showed a small screw of an adjacent artificial tooth causing the trouble.

(k) In nose and throat surgery there are many uses. In ear surgery the rays have not accomplished much.

(l) In the chest it has differentiated pneumonic solidification, phthisical foci, cavities, abscesses, tumors, bronchiectasis, emphysema, retraction of lungs, effusions in pleural cavity and irregular excursions of the diaphragm.

(m) In the abdomen measurements and outlines have been determined by means of metallic guides.

(n) The heart and great blood-vessels may be studied, aneurisms detected and often arteriosclerois recognized.

(o) A clot in the brain if large in size and near the surface may be skiagraphed.

(p) Enlargement of axillary glands have been seen in breast cancer.

(q) We may diagnose gout from rheumatoid arthritis by bony outgrowth and deformity of the latter.

(r) In obstetrics so far results have been negative, waiting for the devising of a fluoroscope which can be used per vaginam.

(s) Legal medicine gains evidence of
  (1) Injury or presence of foreign body.
  (2) Bodily identification.
  (3) Death by clearly defined heart outline.
  (4) Facts for malpractice.
  (5) Viable fetus—the lungs show opaque when never expanded.

(t) In Military surgery its use is obvious.

(u) Life insurance companies could make it very valuable.

(v) Examination of food and drugs—finding chalk and sand in flour, et cetera.

(w) Differentiating diamonds from glass. (I am aware this as a rule would not interest the physician).

(x) It is valuable in anatomy and physiology for studying all manner of conditions, functions and actions in health and disease.

(y) The veterinary surgeon will find it useful
  (1) In hoof troubles (hoof is permeable).
  (2) Abnormalities of bones. In diagnosis of spavin and navicular disease it has not been successful to date.

(B) Therapeutic Value.

In using *x*-rays it soon became evident that many people had a trophoneurotic idiosyncracy for the same; furthermore observations were made that relief of pain often followed their use.

Based on this, trial was directly made, to determine if they had any therapeutic value. This field is, however, still new and final judgment cannot be passed on the work so far accomplished.

These and other peculiarities of the *x*-ray, however, have proven of value in the following groups of diseases:

(a) Comedo, acne, hyperidrosis.

(b) Carcinoma, sarcoma, tuberculosis, leukemia, pseudoleukemia.

(c) Lupus vulgaris, sycosis, acne, tinea, favus, pulmonary tuberculosis (?)

(d) Painful malignant and inflammatory conditions, neuralgias and itching dermatoses.

(e) Eczema, lupus erythematosus, lichen planus, psoriasis.

(f) Hypertrichosis, sycosis, favus.

X-ray dermatitis is the great difficulty that keeps workers timid, but it seems that, as the subject is better understood, and workers become more proficient, this difficulty is more and more eliminated.

Beck, of New York, reports four thousand cases without evil results.

Williams, of Boston, has not had any serious difficulty in over ten thousand cases.

Monell, of Brooklyn, has no cases to report after extensive work in this line.

Bacteriological experiments show that rays have no effect on typhoid or anthrax bacilli, nor on streptococci or staphylococci. Pure cultures of cholera, typhus and diphtheria die after an exposure of forty-eight minutes to intense radiation.

FARADIC ELECTRICITY.

The induction coil was the discovery of Faraday in 1831-32.

To Duchenne's labors (1847-55) we are indebted for our knowledge of the physiological and therapeutic properties of this current. He might well be called the founder of modern electrotherapeutics.

The combined efforts of Apostoli, Tripier, Englemann, Goelet, Monell, et cetera, have resulted in so improving and modifying this current, as to make it the useful agent of today.

Faradic currents are isolated rises of pressure in a wire, produced at the moment of breaking or making the galvanic current which circulates near this wire.

The strength of the current so produced is proportional to the strength of the producing current, plus the length of wire, subjected to the influence of the inducing current circuit.

It is necessary that the two wires carrying the inducing and induced currents be close to each other. The intensity of the inducing current from the first coil is increased if a soft iron core be inserted within it.

The action of the primary and slowly interrupted secondary is that of muscle contracting and in this way acts like massage; with increase in interruptions the action on the muscle becomes tetanic.

The action of the high tension faradic current is what may be considered a fine vibratory, molecular massage.

Apparatus.—As regards equipment it will be necessary in order to do efficient work in this branch to be possessed of

(a) A high tension, medical induction coil apparatus, containing at least a mile of copper wire, thoroughly insulated, and wound in a coil, covering the primary coil, and so arranged that various lengths can be switched in and out of the field. It should be provided with a rheostat, to regulate current and dosage; rapid and slow interrupters, pole reversers, and requires four to six cells to supply the current.

(b) An assortment of large and small felt pads.

(c) Electrodes of various shapes to meet the needs of application, to various parts of the body.

(d) Geissler tube three to four inches long with which to test output. The machine must be able to light up this tube if in good running order.

Application—The methods of application of this current are, briefly:

(a) Local or general.
(b) Stabile or labile.
(c) Positive or negative.
(d) Monopolar or bipolar.
(e) Primary or secondary.
(f) Bare metal or covered electrodes.
(g) Water bath electrodes.
(h) Slowly or rapidly interrupted current.
(i) Slowly or rapidly interrupted current intermittent in its action.
(j) Slowly or rapidly interrupted current swelling in its action.
(k) Hand used as an electrode.

A number of methods are often combined in one sitting.

The active electrode is never large.

There really cannot be any general application except by a succession of local applications.

The density of coil currents is proportioned to the area of contact of the electrode, and this is an important factor in dose regulation.

The greatest therapeutic action is near the electrodes, therefore they must be so applied and handled as to direct the action to meet the indications.

Physiology.—The various physiological results which we aim to attain by coil currents depend on—

(a) Proper quality in the currents.
(b) Choice and preparation of electrodes.
(c) Correct dose regulation for the purpose sought.
(d) Correct technique.

The physiological effects of currents of high tension and frequency are a powerful beneficial action upon disease due to impaired nutrition, accelerating organic changes and aiding combustion.

Berlioz investigated this matter by observations on the urine, and found a diminution of uric acid, while the percentage of urea was increased. The elimination of the mineral product is also changed, but in a manner less marked.

Debedat has also made a series of experiments leading to the same conclusions.

When daily treatments are given, of fifteen-minute sessions, we notice these modifications in our patients' condition:

(a) Return of sleep.
(b) Increase of strength and vital energy.
(c) Improvement of appetite and digestion.

(d) Trophic changes are more slowly affected and these conditions will sometimes remain refractory for a long time.

(e) In the control of local pain the high tension, rapidly interrupted current, certainly at times does wonders and this anesthetic action of the same makes it one of the most useful therapeutic measures in selected cases.

Therapeutics.—Faradism is of therapeutic value in:

(a) Improving muscle functions; slowly interrupted currents act on voluntary, and rapidly interrupted currents act on involuntary muscie fibre.

(b) General tonic.

(c) Quieting nervous conditions.

(d) Relief of insomnia.

(e) Reducing fever, restlessness and pain of acute inflammatory diseases.

(f) Overcoming inertia of uterus in labor and is valuable in postpartum hemorrhage.

(g) Male sexual disorders.

(h) Dyspepsia, constipation, torpidity of liver, vomiting of pregnancy.

(i) Headaches, hemicrania, neuralgia and neurotic conditions.

(j) Rheumatism and gout.

(k) Paralysis.

(l) Pain.

(m) Phlebitis (phlegmasia alba dolens).

(n) Ovaritis—acute and chronic.

(o) Ovarian and uterine congestion.

(p) Amnorrhea, dysmenorrhea and menorrhagia.

(q) Ovarian neuralgia.

(r) Vaginismus, vaginitis and pruritus of the vulva.

(s) Prolapsus ani, incontinence of urine.

As a final suggestion let me state that if you use a faradic battery be sure it is a good one; be careful to have it in perfect working order, for herein lies the keynote of success. Poor batteries and batteries in poor condition are a delusion; they only destroy your confidence in this wonderful branch of electrotherapeutics, and deceive your patients. You may use it as a placebo the same as any other remedy; but this is not its scientific sphere; only true, honest, conscientious study of cause and effect and persistent technique along this line will bring you success.

Regard for quality in his professional work should decide the physician to use the proper instrument, and this in the proper order, if he uses it at all.

GALVANIC ELECTRICITY.

The knowledge of this current dates from the well-known experiments of Galvani on the frog in 1786.

The gynecological methods of Apostoli and others date 1885-1895. Metallic electrolysis has received the attention of medicine since 1894.

The use of electrolysis, in the massive dissemination of nascent oxychlorides of mercury and zinc, for the destruction of cancer cells, was presented at the meeting of the American Medical Association in Philadelphia in 1897 by Massey.

The galvanic current results from chemical action within primary cells.

The cell of the medical battery consists of an electro positive element, and an electro negative element, contained in a jar filled with a solution called the exciting fluid. The chemical action is the decomposition of the electro positive by the excitant solution in which the two elements are immersed. Such a cell will produce an electric current of the type known as galvanic when conducting wires from the two elements are placed in contact.

The initial value of a current from a single cell is one and one-half to two volts and one and one-half to five amperes according to size of elements.

For clinical work to reduce amperage and increase voltage we connect in series.

Physiology.—Galvanic currents, after becoming subdermic, are capable of great diffusion and their lines of dispersion are greatly modified by encountering tissues of varying density. The effects of the current would also be more intense at region of application than in intervening zones. The action of galvanic currents may be separated under these headings:

(a) Functional stimulation and sedation by general and local application to nerves.

(b) Alterative action by which nature is assisted in rebuilding tissues and removing the useless.

In both these conditions we bring forth a polarizing effect which acts as stimulant and alternant.

(c) Electrolysis is the property the current has of separating a compound solution into its component parts.

(d) Cataphoresis is the introduction of medicaments into the body, through mucous membrane or skin, by means of this current; the process itself is partly physical, but the combinations formed under its influence place it properly under a chemical subdivision.

Apparatus.—Apparatus necessary for satisfactory work in this branch consists of—

(1) A battery of about fifty cells.
(2) A milliamperemeter.
(3) A rheostat.
(4) A pole changer.
(5) A cell selector.
(6) Automatic interrupter.

These might conveniently be arranged in a cabinet.

Besides these a variety of electrodes are required including felt pads.

Methods of application are:—

(a) Constant or interrupted.
(b) Positive or negative pole or alternating the polarity.
(c) Local or general.
(d) Polar or interpolar effects may be made to predominate.
(e) Covered or bare electrodes (including needles under the latter).
(f) Medication by cataphoresis or electrolysis.
(g) Labile or stabile.

(h) Each local or general effect may be modified by regulation of dosage and length of sitting.

Therapeutics.—Galvanism is of therapeutic value in—

(a) Amenorrhea, dysmenorrhea, endometritis, minor lacerations and erosions of cervix, stenosis of internal os, congested and prolapsed enteritis, et cetera.

(b) In nearly all male sexual disorders.

(c) Incontinence of urine.

(d) Chronic gastritis, dyspepsia, constipation, internal catarrh, enteritis, et cetera.

(e) Neuralgia, hemicrania, neurasthenia, paralysis, muscular atrophy.

(f) Acne rosacæ, barbers' itch, benign vascular tumors, nevi, corns, port wine marks, superfluous hair.

(g) Chronic ulcers.

(h) Relaxation of abdominal walls.

(i) In ectopic gestation, during the early months the ovum may be devitalized, and its complete absorption secured in unruptured tubal pregnancy.

(j) In selected cases of fibroid tumors.

(k) In cancer, the electrical diffusion of nascent, oxychlorides of mercury and zinc has been successfully used.

Gentlemen, I thank you for your indulgence; this work and compilation from all accessible literature, has been a labor of love. It will be a source of great gratification to me, if I have succeeded in adding to your interest and information in a field which offers such brilliant inducements. There is in this "no royal road to geometry," the purchase of an instrument does not make an electrician; but I can assure you that earnest study and hard work will amply repay your efforts.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., D. Sc., Ann Arbor, Michigan.
PROFESSOR OF MEDICINE IN THE UNIVERSITY OF MICHIGAN.
AND
DAVID MURRAY COWIE, M. D., Ann Arbor, Michigan.
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X-RAY TREATMENT OF LEUKEMIA.

Grosh and Stone (*Journal of the American Medical Association*, July 2, 1904) report a case of this kind.

A bricklayer of forty-four years, who had complained of diarrhea, backache for a year, weakness and shortness of breath for a few days, was found to have 2,100,000 red corpuscles, 960,000 leukocytes, hemoglobin forty-five per cent, with many myelocytes, normoblasts and basophiles. The patient was treated with arsenic, mercury and sodium cacodylate for about nine months. At the end of that time the leukocytes numbered 135,000, with the general picture of mixed-celled leukemia.

In February, 1904, *x*-ray treatment was begun. A medium hard tube was used at six to eight inches distance, for five minutes daily over the sternum, spleen, and epiphyses of the long bones. Internally arsenious acid, iron and mercuric chlorid were used. The leukocyte count when the *x*-ray treatment was begun was 252,000. The spleen extended from the seventh intercostal space in the midaxillary line to one finger's breadth to the right of the navel, and a hand's breadth below; the liver reached two fingers' breadth below the ribs. After twenty treatments the leukocytes numbered 14,918; there was a slight erythema and the treatment was stopped. The spleen was somewhat smaller, reaching the navel, with the lower end at that level. In a week the leukocytes numbered 11,360. The spleen was still smaller and harder than before. The patient felt well. Dark areas on the face, neck and body seemed darker than before. The erythema had gone on to vesiculation and rupture, but without evidence of destruction of dermis. In two weeks more the leukocytes numbered 10,600, with two per cent of myelocytes. The entire chest and abdomen were raw; general condition fair; spleen smaller. Within a few days the patient died. The burns were healing, there was no rise of temperature, albuminuria, or other evidence of intoxication. Autopsy showed the conditions usual in myelogenous leukemia, with red, dirty-grayish marrow in the femur.

The authors report a number of important details regarding the blood and urine, for which the original should be consulted, the report forming one of the most complete that has appeared on this interesting and important subject. G. D.

SURGERY.

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AND
CYRENUS GARRITT DARLING, M. D., ANN ARBOR, MICHIGAN.
LECTURER ON SURGERY AND DEMONSTRATOR OF SURGERY IN THE UNIVERSITY OF MICHIGAN.

TREATMENT OF CHRONIC INTERNAL HYDROCEPHALUS BY LUMBAR PUNCTURE.

DOCTOR H. LOWENBURG, of Philadelphia (*American Medicine,* August 6, 1904) reports the case of a child, twenty months old, in which the head measured nineteen inches in circumference at the level of the occipital protuberance. Lumbar puncture was begun December 5, and was continued at intervals of three to eleven days. The largest amount of fluid removed at one time was two and one-half ounces, the smallest amount one and one-half ounces. Nine punctures were made. The circumference of the head was reduced one inch, and the mental and physical condition of the child was much improved, but unfortunately the patient contracted measles and died of broncho-pneumonia on February 17.

The author's experience has led him to the following conclusions:

(1) There must be free communication between the ventricles and the subdural space.

(2) The head must be compressible.

(3) The bones must be flexible and there must be no evidence of ossification in the fontanelles or the sutures.

(4) Ossification is usually well advanced after the second year, therefore treatment must be instituted before this period.

(5) Lumbar puncture is preferable to direct tapping of the ventricles, as there is entire absence of danger of the untoward complications following the latter.

A CASE OF TETANUS SUCCESSFULLY TREATED BY ASPIRATION OF THE CEREBROSPINAL FLUID AND INJECTION OF MORPHIN-EUCAIN AND SALT SOLUTION.

Doctor John B. Murphy, of Chicago (*Journal of the American Medical Association,* August 1, 1904) reports the case of a boy eight years old who cut his foot on a piece of glass. Six days later he developed symptoms of tetanus and on the seventh day was taken to the hospital. At this time there was trismus and spasm of the muscles of the neck, together with slight contraction of the muscles of the back, the latter reaching a marked degree of severity before the treatment was begun.

The wounds were curetted and cauterized with ninety-five per cent carbolic acid solution and packed with gauze. Examination of pus and cultures failed to show the tetanus bacillus. Following the dressing there were convulsions every ten or fifteen minutes, and during the day following three full doses of antitetanic serum were given without effect.

On morning of the fourth day of the disease, the convulsions were almost continuous. A lumbar puncture was made and sixteen cubic centimeters of cerebrospinal fluid withdrawn. Three cubic centimeters of a solution composed of Beta-eucain, one and a half grains; sulphate of morphin, one-third of a grain; sodium chlorid, three grains, and distilled water, three and one-half ounces, was injected into the space through the same needle. The solution was sterilized by boiling. Four hours continuous sleep followed the treatment, but after that, rest was broken at intervals of an hour and a half. There were only eight spasms of short duration in the twenty-four hours, the severest occurring about 4 o'clock on the following morning.

At 11 A. M. on the fifth day the treatment was repeated, fifteen cubic centimeters of the fluid being withdrawn and four cubic centimeters of the solution injected. No spasms appeared until late in the afternoon. On the sixth day, when the spasms began to increase, fifteen cubic centimeters of the fluid were withdrawn, and four cubic centimeters of the solution injected. The treatment was repeated at noon on the seventh day.

His condition was so good on the eighth day that the treatment was omitted, but mild spasms returning, it was repeated on the tenth day. The spasms became less frequent at longer intervals and the last treatment was given on the eleventh day from the first manifestation of the disease. He was discharged from the hospital on the twenty-second day.

Attention is called to the appearance of the cerebrospinal fluid. The first removed was cloudy and contained pus, but that removed on the third day was clear. The small dose of morphin, one-seventy-fifth grain, and eucain, one-fiftieth grain, did not produce unfavorable results; the muscles were relaxed and the patient fell into a quiet sleep. The eucain might be increased to one-sixth or one-third grain with benefit, and the treatment more frequently repeated. Eucain is preferred to cocain because it can be sterilized by boiling, and there is less idiosyncracy to intoxication.

The relief from pressure by withdrawing the cerebrospinal fluid enables the remaining fluid to overcome the infection, the injection overcoming the spasm of muscle.

The writer further announces, that as a treatment for cerebrospinal meningitis, he would puncture the cranium over the lateral ventricle, and insert a fine needle until the fluid escapes; then make a lumbar puncture with a second needle and use normal salt solution by hydrostatic pressure to wash the cerebrospinal cavities from above downward.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., Detroit, Michigan.
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ATTENDING THE LORENZ ORTHOPEDIC CLINIC IN VIENNA.

A CLINICAL STUDY OF SIXTY-TWO CASES OF INTESTINAL INFECTION BY THE BACILLUS DYSENTERIÆ (SHIGA) IN INFANTS.

LaFetra and Howard (*Archives of Pediatrics*, March, 1904) report the result of their study of sixty-two cases of infantile diarrhea, all of which were ambulatory, occurring in the Vanderbilt clinic in the summer of 1903, in which bacillus dysenteriæ was found. The stools of all cases with history of diarrhea were obtained on sterilized cotton and examined regardless of the nature of the attack or its severity. As a routine measure the use of cow's milk was at once discontinued in all cases, the breast feeding was prohibited for a time, and barley water, rice water and broth employed instead. Very little medicine was given with the exception of calomel or castor oil for free catharsis. The severer cases were in the older children and the milder cases occurred in the younger breast-fed. There were fourteen severe cases in all and only one of these was breast-fed. In the sixty-two cases, there were fourteen which were entirely breast-fed, two partly breast-fed, and of the remainder seven were fed on bottled milk, eleven on grocery milk, eight on condensed milk, five on proprietary foods, five on sterilized milk, four on general diet and in seven no statement was obtained. From their study the authors emphasize the following points:

(1) The great prevalence of the dysentery organism. Of sixty-four consecutive cases examined—sixty-two were positive.

(2) All types of diarrheal diseases were found, from the mildest to the severest forms.

(3) There were four fatal cases, all of which were under one year of age. All were artificially fed and the fatalities occurred among those who were in poor condition, and those having the poorest care and attention. This low mortality the authors attribute to the coolness of the summer and to the increasing knowledge among the mothers in the tenement districts as to the care of infants and their food.

(4) The serum treatment (used only in ten cases) was apparently of benefit but not used sufficiently to warrant any conclusions. It may be that larger dosage is necessary; if so, the serum must be more concentrated than at present.

OPHTHALMOLOGY.

By WALTER ROBERT PARKER, B. S., M. D., Detroit, Michigan.
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TRANSIENT MONOCULAR BLINDNESS.

T. H. Jameson (*Ophthalmic Record,* June, 1904) reports a case of transient monocular blindness, with complete study of the fundus from the onset to recovery. The patient was a male, aged sixty-four.

History.—There was no blindness in family, no former trouble in eye, no pain or other symptoms in eye. For a man of age, he was apparently in splendid health. Some ten days ago he noticed objects getting darker before the right eye (finally fading into nothing), and on closing the left eye he could see nothing. The periods lasted, he thought, for five minutes. The same phenomena had occurred once every day, and twice during the last two days.

Ocular Examination.—Vision, oculus dextra 20/30. Oculus sinistra 20/30. Lids healthy, cornea clear and normal, tension normal.

Ophthalmic Examination.—Condition normal, except central artery of the retina, and its branches were fuller than normal.

Physical Examination.—Healthy and strong. Pulse losing one to three beats a minute. Strong and bounding. Patient had been taking oil of wintergreen two milliliters, and Harlem oil fifteen milliliters, three times a day. All medicine was stopped.

Four days later patient reported that he had missed having blind periods for the last two days While viewing the fundus, I saw the central artery of the retina fade into a mere white line, followed closely by the fading of the vein and its branches, until I could not even make out their position. The optic disk became perfectly pale and white, retina pale, and through it could be made out the choroidal vessels radiating in all directions from the outer border of the optic disk, and in probably two minutes' time the central artery became visible, followed by filling of the vein and normal condition of the fundus of the eye. When the artery began to fade, patient remarked that objects were getting dark before the right eye, and when the vein had faded from vission he said he could see nothing with the right eye. I had him close the left eye, and he said he could not see the light reflected into the right eye.

Posey, in discussing the case, said: "In the absence of any pathologic findings in the fundus after the attack of blindness such as has been described, it is natural to impute the loss of vision to the spasmodic affection of the vessels, the spasm not being maintained long enough to cause any permanent change in the tissues." Prognosis is generally good, and attacks are not to be dreaded, although cases have been recorded where vision was permanently lost.

Charles H. May, in reviewing Posey's paper, thinks the blindness caused by spasm of the walls of the vessels probably due to endarteritis.

Liebrecht, as the result of numerous examinations, says: "The optic nerve is injured by arteriosclerosis more often and in a much greater degree than has been hitherto assumed. The injury does not take place in the bony optic canal, because in this position the ophthalmic artery has already entered the dural sheath of the nerve and can no longer exercise any pressure on the nerve."

Charles Stedman Bull, writing on arteriosclerosis and its bearing on certain lesions of retina and optic nerve, says: "In some of the cases which have been under my observation for years, with the presence of scotoma and increasing loss of sight, there have been no evidences of arteriosclerosis of the retinal vessels as long as they were under the observation until the atrophic process reached the disk. The location of the pressure points would naturally vary with the course distribution of the vessels in individual cases.

"(1) It might be in the prolongation backward of the long optic canal toward the skull, where very often the ophthalmic artery enters the optic nerve in a longitudinal direction.

"(2) It might occur near the upper sharp border of the fibrous optic canal, where the optic nerve is broadly pressed on by the ascending carotid. Or, finally, it might occur midway between the fibrous canal and chiasm, at the point where the carotid and the anterior cerebral artery cross above and below the optic nerve."

Considering the case reported, the author says: "It is evident the blood current was interrupted some place along its course from heart to retina. The lack of symptoms other than monocular blindness would leave only the ophthalmic artery from internal carotid to retina to be considered.

"Further, that the interruption is not in the bony optic canal nor until after the short ciliary branches are given off is evidenced by the choroidal arteries being distinctly seen during the absence of blood in the central artery of the retina and its branches, for the ciliary arteries which supply the choroid are given off after the ophthalmic artery leaves the bony canal.

"According to Gray, as the optic nerve passes from the brain it receives sheaths from the three cerebral membranes—

"(1) A perineural sheath from the pia mater.

"(2) An intermediate sheath from the arachnoid.

"(3) An outer sheath from the dura mater.

"These sheaths are separated from each other by spaces which communicate with the subdural and subarachnoid spaces respectively. The outer or dural sheath is attached to the periosteum as it passes through the optic foramen. The inner invests the nerve through its length and sends a process around the anteria centralis retinæ into the interior of the nerve. Any change of pressure by the subdural or subarachnoid fluids which reached the central artery of retina would be sufficient to cause collapse or spasm of its walls and thus produce blindness for a time.

"The pressure in this case was probably arterial from heart stimulant, which gave him the bounding pulse. Some anatomic difference, or structure change, would account for the symptoms showing in only one eye. This opinion is strengthened by the fact that during the next ten days only two attacks of transient blindness were noticed."

The patient's age and his intermittent pulse would indicate degenerative changes in his vessels, which had reached the central artery of the retina but had not yet shown in the fundus.

THE ULTIMATE RESULTS OF IRIDECTOMY FOR PRIMARY GLAUCOMA.

G. Wygodsky (*Wochenschr. f. Ther. u. Hyg. des Auges*, January 8, 1904) observed 1,245 cases of glaucoma in 61,085 eye patients. In 458 eyes, iridectomy was performed, not including those affected by absolute or hemorrhagic glaucoma. The results were followed for more than two years in 315 cases, of which 37 were cases of acute inflammatory glaucoma, 148 of chronic inflammatory and 130 of simple glaucoma. The author comes to the following conclusions, based on this rich experience: Iridectomy is indicated in all stages of the inflammatory forms, as it is possible to obtain a favorable result even in a late stage; the prognosis is better the earlier the operation is performed, and is more favorable in the prodromal stages, because no anatomic changes have become established in the eye. A good prognosis is also offered in acute inflammatory glaucoma, as the visual disturbances are produced in this case by the great cloudiness of the media.

and the ischemia of the retina; iridectomy reduces the intraocular tension to normal, and in this way removes these conditions. The prognosis is less good in chronic inflammatory glaucoma, and is better the less the visual disturbance is based upon anatomic changes in the optic nerve, that is, the earlier the operation. In typical simple glaucoma the prognosis is bad, hence Wygodsky recommends iridectomy only in cases with well marked increase of intraocular tension, when the central vision is still good, and in the absence of decided contraction of the visual field. Sclerotomy and secondary iridectomy improve the results of the primary iridectomy. Treatment with myotics alone is insufficient, and only to be employed when operative interference for some reason is contraindicated.

LARYNGOLOGY.

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HAY FEVER.

In the January number we reviewed the subject of hay fever in the light of recent literature. The interests centered largely upon the work of Dunbar, who has isolated a toxin from the pollen of certain plants, and which according to him, is the exciting cause of hay fever. He has prepared also, an antitoxin, which he claims neutralizes the poison.

As the hay fever season approaches, much interest is manifested in the theory of Dunbar. During the last few months, a number of articles have appeared which have, in the main, been favorable to Dunbar's theory. In the March (1904) number of the *Berliner klinische Wochenschrift,* A. Lubbert and C. Prausnitz report seventy-one cases, partially benefited, which they divide as follows:

(1) Cases not heard from after a few doses were given.

(2) Cases which obtained relief from mild attacks, and not from severe ones.

(3) Cases which obtained relief from certain symptoms, but not from others. In twenty-nine cases of asthma, the result was negative in nine.

In the *Medical News,* April 23, 1904, Somers reports some good results from serum.

Otto Scherer has made some very careful investigations and experiments as to the cause of hay fever, and reported them in the *Journal of the Michigan State Medical Society,* May, 1904. He believes hay fever, in this country, to be a clinical and pathologic entity with sharply defined characteristics. Scherer experimented with ragweed pollen. He isolated from the pollen a white, amorphous substance, which has a toxic action on a hay fever patient. He found that all hay fever patients reacted to the toxin, while those who had never suffered from the disease were immune. Many other observations were made.

Scherer's article is a valuable contribution to the literature of the subject.

Under the title, "New Method of Treatment of Hay Fever," Emmanuel Fink (*Revue Heb. Lary. d'otol et du Rhin.*, April 30 and May 7, 1904) reviews some of the work done by others as well as by himself. He then takes up the theory of Dunbar, and calls attention to the observations of Heymann, Maatzuschita and Strangujay, who demonstrated that the air during June contains very little pollen. Heymann found on the average only three grains of pollen in the mucus expelled from the nose of a hay fever patient. Weill, who experimented in the Institute under the direction of Dunbar, did not find a single grain of pollen in twenty-six specimens carefully examined. The author believes that the small amount of pollen in the nasal mucous membrane does not cause the hay fever attack. He also thinks that the involvement of the eyes cannot be explained by Dunbar's theory.

He calls attention to the experiments of Dunbar wherein subcutaneous injection of the pollen toxin causes symptoms of poisoning as well as symptoms of hay fever, and that mucous membranes, other than the nasal, react to the toxin. The author calls attention to the periodic nervous coryza, with its accompanying asthma, that has the same symptoms as has hay fever, without being due to pollen. Bride showed that the toxin of Dunbar does not always produce the reaction in a hay fever patient, and Semon observed that persons who have never suffered from hay fever reacted to the toxin. The author believes that the copious secretion in hay fever comes solely from the middle meatus, and that the antrum is the origin of it. Fink insufflated an insoluble powder into the antrum before the attack, and observed that the powder was constantly present in the secretions during the attack. He treats hay fever by insufflating aristol powder through a small canula, introduced through the natural opening. He claims that failure to introduce the canula is usually due to the use of too large an instrument. This treatment is used daily at first, then less often as the patient improves. Fifteen cases are reported showing the results of this treatment.

PREPARATION AND AFTER TREATMENT IN NASAL OPERATIONS.

H. Beaman Douglass (*Post-Graduate*, May, 1904) considers, in a careful manner, some of the problems in nasal surgery. He urges strict asepsis before, during and after operations, and gives in detail his method of cleansing the nose. He produces local anesthesia by the use of pledgets of cotton soaked in a four or five per cent solution of cocain. In operations upon the septum both sides should be anesthetized. The use of suprarenal solutions allows weaker strengths of cocain to be used. In septum operations he advises that a pledget of cotton soaked in a four per cent solution of cocain be tucked under the upper lip against the superior maxillary bone. Left in position it will materially diminish pain from septum operations.

Douglass considers that the "taking cold," described by patients after nasal operations, is a mild form of sepsis. The treatment of nasal sepsis consists in securing drainage from the nose and combating the constitutional symptoms. The local treatment consists in contracting the tissues by the use of weak solution of cocain and adrenalin and of subsequent irrigation.

Granulation and synechia are then considered by the author. He calls attention to the importance of having a clean-cut surface free from irregularities after operations. Hemorrhage is next considered and the various methods of prevention and treatment are given.

The paper and discussion show very well the importance of attention to details if the best results are to be obtained in nasal surgery.

THE ETIOLOGY OF NASAL POLYPI, WITH ESPECIAL REFERENCE TO THEIR ASSOCIATION WITH OTHER PATHOLOGICAL CONDITIONS.

FRANCIS R. PACKARD (*American Journal of the Medical Sciences,* November, 1903) agrees with a number of observers that nasal polypi are not true myxomata but "pendent tissue in the nose which assumed that shape because of the effusion of the serum into it from the blood-vessels." He reviews the opinion of a number of observers. He gives in detail the clinical history and microscopic findings of two cases, which showed mucoid degeneration associated with disease of the bone. He calls attention to the importance of considering nasal polypi as a symptom of underlying conditions, and not as a tumor.

NEUROLOGY.

BY DAVID INGLIS, M. D., DETROIT, MICHIGAN.
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THE QUESTION OF EYE-STRAIN.

IN these days it is fair to believe that we may come to some safe and fairly reliable conclusions regarding the role played by various reflex causes in setting up neuroses. Time was when the profession went on in happy ignorance that reflex causes could produce effects of any kind. Then came a period of education. Specialists felt, and, justly, that the general practitioner needed to be awakened to recognize reflex neuroses. As specialists, and, later, general practitioners gave attention to this mode of causation of neuroses, accounts of many marvelous cures began to fill our medical journals.

All medical men are singularly human and it followed as the night the day that the enthusiasts lost their heads and misled by the surprising and gratifying recoveries, drew vast conclusions quite out of proportion to the facts. Stevens and some admirers proposed to accomplish miracles by tenotomies of the extrinsic eye muscles. When a commission of neurologists looked into Stevens' claims and results and reported adversely it was claimed that not scientific but personal reasons lay behind the adverse report. Still time, which proves so many things, has demonstrated that the commission was fairly near the truth. Oculists are not doing very many tenotomies to relieve neuroses.

Recently, however, the unsuppressible Gould has taken up the subject of migraine and made a fresh outbreak on Stevens' lines. His articles resound much as one can imagine the china shop did when the bull broke loose. No medical man's reputation, ancient or modern, is safe when Brother Gould begins to dogmatize. The deadly dullness is dissipated and a series of articles appeared in the *Medical News*, July 30, which reopen the question of the part which eyestrain plays in the causation of neuroses.

Charles L. Dana, discussing "Eye-strain and the Psychoses," says:

"In studying the influence of eye-strain upon the bodily functions, it is very necessary to know what is meant by this term. It is not found at all in works on psychiatry, and is not mentioned in all recent works on ophthalmology. It is, on the other hand, rather frequently found in medical journals and in semipopular medical literature. The eye seems to be the only organ which is thus popularly associated with a strain; for we do not hear of ear-strain or tongue-strain, stomach-strain or kidney-strain. Nevertheless, "eye-strain" is a convenient word, and probably carries a fairly definite meaning to most minds.

"As I understand the term, eye-strain consists of two kinds of straining. In one case it is the automatic effort of the midbrain and oculomotor nerves to adjust the eye in such a way as to overcome abnormalities in refraction, accommodation and imperfect muscular balance. This kind of straining is largely done unconsciously, just as a person with one leg shorter than another unconsciously adapts his posture and gait to the deformity. This is really an eye-strain proper; it does not involve attention or conscious mental effort, except casually. It is mostly subcortical and is a kind of spinal eye-strain.

"As long as eye defects are automatically regulated by the machinery of the oculomotor nerves and midbrain, there will be no serious consequences, any more than a person with a somewhat shortened leg will suffer much as long as the shortening is so slight that it calls for no voluntary effort to help each step along. At least, it is only when a patient's brain becomes seriously weakened or tired by some additional trouble that the ordinary limp may become a real discomfort.

"The further inference is, in my opinion, that many, perhaps most, minor ocular defects *may* exist without doing any harm, the organ compensating perfectly, like a leaky heart. (Over seventy-five per cent of school children have refractive errors.)

"The second kind of eye-strain occurs when the eye is more seriously defective, or the receiving apparatus of the brain is fatigued. Then the cortical centers are brought into play. The imperfect vision is appreciated with some sense of its defective working, and a distinct and fatiguing effort is made to supplement the ordinary mechanism of the eye, and a sense of this effort, to the point of distress, may result.

"Now, with reference to the effect of eye-strain in producing the major psychoses. Alienists, I think, without exception, do not recognize eye-strain, even as a contributing cause. I cannot find any systematic writer who even refers to it. In the last edition of Kraepelin (1903), and in the monumental work of Ballet (1903) of 1,500 pages, no reference is made to the subject.

"Some years ago, as Doctor Mabon, formerly superintendent of the Saint Lawrence State Hospital, informs me, a serious attempt was made by a competent oculist to help or cure cases of insanity in the hospital under his care, by attention to the eyes. But the oculist failed. About six years ago Doctor Coikendyl made similar experiments at the Willard State Hospital, and claimed some successful results. I am not prepared to deny his success, but I know that the hospital physicians did not share his opinion as to the value of his work. Some years ago oculists were appointed to the State hospitals of New York, and have done good work in relieving obviously defective conditions, but not in curing insanity."

Dana sums it up thus:

"I do not think that our mental balance and nervous well-being are so entirely at the mercy of slight defects in an organ that has been perfected by millenniums of use and misuse. Perhaps after all the most real psychosis connected with eye-strain is that shown by a group of enthusiastic oculists who have become obsessed with the idea that eye-strain forms the background of most pathological conditions, and, like Bishop Berkeley and his tar-water, think that the whole material universe is nothing and eye-strain is everything."

Coleman W. Cutler writes of "Migraine and Sick Headache." If there be one form of neurosis more closely associated with eye-strain than any other it is migraine. Here have been the most signal benefits. Gould, in his articles has practically maintained that all cases of migraine are so caused and to be treated on this basis. Cutler, while fully recognizing the need and value of correction of ocular defects, has a sane and wider view. He says:

"Thus, where a patient has sick headache, and is relieved by the correction of half a diopter of astigmatism, the fault is not with the eye primarily, but with the unstable nervous system which made him susceptible, and it is into this that migraine resolves itself. But the fact remains that the disease must be approached at the periphery and the hope of success increases as our diagnostic and therapeutic measures become more perfect."

Cutler calls attention to the fact that certain ocular defects are often inherited in a very accurate way and, similarly, that the form of migraine is often identical in two generations, and says:

"Now, the fact that ocular defects are handed down in families with great uniformity is so common in the experience of every oculist, that it needs no especial proof. Astigmatism is not infrequently similar in kind and in axis; muscular faults are also passed on in the same way by parents. Putting these facts together, namely, the heredity of migraine of a fairly constant type, with the transmission of certain forms of ocular defects in members of the same family, the correction of which in some cases relieves the sick headache, and we have a fair basis for the assumption that sick headache, having all the clinical features of migraine, is often a reflex neurosis of ocular origin. No doubt there are many other sources of peripheral irritation— the pelvic organs, nose, digestion—which need not be discussed here."

While he thus values the work of the oculist he keeps the larger consideration in mind, and says:

"Many patients respond to very slight excitation while others bear large burdens of uncorrected astigmatism or nasal obstruction or other peripheral strain with impunity, so that the vague personal equation is at the root of the trouble."

Doctor B. Sachs writes of "Relation of Epilepsy, Chorea, et cetera, to Eye Disease." His article is quite as conclusive as the rest. He says:

"Let us confess frankly at the outset that the dependence of these motor neuroses, to use a convenient term, upon diseases of the eye, has been greatly exaggerated. Cases in which such dependence could be satisfactorily shown to exist are very few indeed, and the cases in which these neuroses have been cured by treatment of the ocular condition are fewer still.

"It is curious that the claim of a relation of ocular affections to epilepsy and chorea is maintained chiefly by American writers; by oculists and pseudo-oculists rather than by neurologists. In the larger monographs issued within the last ten years in Germany, in France, in England, and in this country, in which the subjects of epilepsy and of chorea have been exhaustively treated in a truly scientific spirit, mention is barely made of the influence of muscular insufficiency, of marked errors in refraction, or of any other ocular derangement upon the development of the nervous diseases which we are now considering."

Again he says:

"I am willing, therefore, to grant that it is but fair that the patient suffering from epilepsy should be given the advantage of most careful examination by a competent and unbiased oculist, and that errors in refraction, muscular insufficiency and the like, should be properly corrected. If we proceed one step further and ask whether these measures are generally successful in inhibiting attacks, I make free to answer that from my own personal experience I do not know of a single case in which the epileptic seizures have been altogether inhibited or even diminished in number by the wearing of glasses, by the cutting of muscles, or by any other ocular measures.

"In the last report of the managers and officers of the Craig Colony for Epileptics, dated October 1, 1903, (page 46), the superintendent, Doctor Spratling, records the fact that Doctors Gould and Bennett were given the opportunity of carefully examining and fitting sixty-eight patients at the Colony with glasses. While these gentlemen in an article of their own had laid much stress "on the enormous proportion of cases of injurious astigmatic and anisometropic defects among epileptic patients" they were given full opportunity to put their doctrines to a test.

"Doctor Spratling gives a table in which he shows that out of the sixty-eight cases only one derived any benefit in his disease while wearing glasses, and the table which he includes in his article is a most instructive one, which might well be read most conscientiously by all those who may in future be inclined to follow this line of work. To be sure, Doctor Gould said when the unsatisfactory results had been brought to his notice, that the results "did not affect the fundamental fact that in a certain proportion of cases the cause, or the contributing cause, may be, and is, eye-strain."

Inasmuch as it is some fifteen years since the Stevens commission of the New York Neurological Society made its adverse report upon Doctor Stevens' claims of the practical value of ocular tenotomies, and as during all these years, alienists, neurologists and oculists have been hammering away upon the subject, the singular unanimity of all these writers is convincing.

EDITORIAL COMMENT.

RECENT PROFESSORIAL RESIGNATIONS.

Gibbon records the information that Diocletian acquired the glory of demonstrating to the world the initial example of a resignation involving high position which has not been frequently imitated by succeeding monarchs. This sovereign resigned possession of a mighty throne, and retired to private life, afterward manifesting his contentment in the information conveyed to Maximian that he would rather revel in his cabbage garden than reign over the Roman Empire. While history does not cite many instances of imperial resignation the prerogative has nevertheless been exercised freely in other official capacity throughout all ages, regardless of prestige or emolument, and today the University of Michigan is called upon to consider the resignations of two members of its teaching force—Carrow and Freer.

* * *

Flemming Carrow, A. M., M. D., professor of ophthalmic and aural surgery and clinical ophthalmology in the department of medicine and surgery, has been connected with the University for fifteen years. His medical career was inaugurated in 1874, when he received the degree of Doctor of Medicine from Columbian University, Washington, which institution he entered on a scholarship gained through competitive examination, the gift being awarded by the late W. W. Cochran, of that city. Soon afterward he received appointment as surgeon-in-charge of a native hospital at Canton, China, where he did the general surgery of the institution for eight years. During this time he was made member of the Anthropological Society of Paris, and of the National Medical Society of Portugal, in recognition of efficient service in securing a series of Chinese skulls for the Anthropological Museum of the former organization. On one occasion while securing these anatomical trophies, which were selected from recently beheaded criminals, he was mobbed by the superstitious Chinese rabble and barely escaped with his life. The French ambassador to China recommended him for membership in the Anthropological Society, of which the renowned Paul Broca was at that time the head. The doctor returned to the United States in 1884, and was called to the chair of ophthalmology in the University of Michigan in 1889. There were four vacancies to be filled at that time, namely, chemistry, surgery, physiology, and ophthalmology. Freer was appointed to the first, Nancrede to the second, Howells to the third, and Carrow to the last. After a service of fifteen years, Doctor Nancrede still retains charge of the department of surgery, which has increased in importance and in the number of clinical patients until now one professor, one assistant professor, and six assistants are required to perform the work. Professor Howells accepted the chair of physiology in Johns Hopkins Medical School when its doors were opened for instruction, and today occupies a position among the foremost physiologists of this country. Professor Freer has added to the reputation of the chemical laboratory of the University and his books are the acknowledged text-books of the leading universities, medical colleges and high schools of the United States. Doctor Carrow found a flourishing clinic in diseases of the eye when he assumed the professorship of ophthalmology. His illustrious predecessor, Frothingham, who organized this special department in the University, succeeded in affording the students a clinic of four hundred fifty patients annually before he resigned in 1889. In that year Carrow instituted two clinics each week, three demonstrations, and one didactic lecture, with daily instruction in the wards of the hospital, and the annual clinic now numbers fourteen hundred. Notwithstanding the time occupied with college work, the doctor has attended to an extensive private practice, his patients being drawn not only from Michigan, but from the adjoining states of Ohio, Indiana and Illinois. He is joint author of the "American Text-Book of Diseases of the Eye, Ear, Nose and Throat," and has devised new operations for ectropion, and upon the ocular muscles. In recognition of his services the University of Michigan has conferred upon him the honorary degree of A. M. His resignation was decided upon after mature thought. He wished to reside and practice in Detroit, and feeling that every clinical professor should live in Ann Arbor in order to make his department a success he decided to serve his collegiate connection.

* * *

PAUL CASPAR FREER, PH. D., M. D., was called to the professorship of chemistry in the University of Michigan in 1889. He graduated from Rush Medical College in 1884, and afterward spent several years in

Germany studying chemistry, where he received the degree of Ph. D., *magnum cum laude,* from the University of Munich. On his return to the United States he was appointed to the chair of chemistry in Tufts College, but soon succeeded Langley in the professorship of chemistry at Ann Arbor. One of his early marks of progress was the separation of the chair of inorganic chemistry from other chemical branches which were taught in the chemical laboratory. It was made a distinct department and under his directorship developed rapidly. Notwithstanding the fact that he received invitations to other institutions he continued his labors at the University of Michigan until the government called him to his present position as head of the scientific work of the Philippines, when he asked for a leave of absence, which finally lead to his resignation. He has been engaged mainly in the study of parasitic diseases among cattle, and his work has solved many problems of value to the world at large.

* * *

The many friends of the University will regret the loss of these two Nestors, but inasmuch as it has been demonstrated time and time again that resignations do not perceptibly affect the onward march of the institution, the vacancies will undoubtedly be filled satisfactorily, as the Regents are credited with usually exercising superior judgment in making appointments. The intimate social and professional ties formed during the past fifteen years by the gentlemen who have just withdrawn are probably relinquished with feelings of sincere regret, but the familiar saw, that there is no great loss without some small gain, may possibly have been an important factor in determining the decision which prompted "the parting of the way."

CONTEMPORARY.

THE CARDIAC AND VASCULAR COMPLICATIONS OF TYPHOID FEVER.

[MEDICAL RECORD.]

THE complications of typhoid fever, in common with other infectious diseases, are exceedingly varied. Some of these are due directly to the intestinal lesions—for example, the intestinal hemorrhage and perforation and peritonitis—while others are due in part to the causative infectious agent, and in part to the resulting intoxication. Among the latter may be mentioned various inflammatory disorders involving muscles, bones, serous membranes, and visceral structures. Endocarditis and arterial and venous thrombosis are by no means uncommon in the course of typhoid fever, and alterations in the myocardium are rarely wanting. It would, therefore, seem likely that this disease may be considered as one of the many causes of cardiovascular sclerosis.

With the object of establishing the accuracy or otherwise of such a view, Doctor W. S. Thayer (*American Journal of the Medical Sciences*) undertook a study of the heart and blood-vessels in 183 of the 1,400 individuals that had at some time within the previous fourteen years been treated for typhoid fever in the wards of the Johns Hopkins Hospital. As a result he found the average systolic blood-pressure appreciably higher than in control healthy individuals. This higher average of blood-pressure was constant for every decade of life. In many instances the blood-pressure in the cases of earlier typhoid fever exceeded appreciably the limits of what is usually regarded as normal. The radial arteries in these cases were palpable in a proportion nearly three times as great as that observed in controls—supposedly healthy individuals who had never had typhoid fever. The average size of the heart was larger among the cases of earlier typhoid fever at the late examination than at the time of admission to the hospital. This difference existed also when the cases were classed according to age by decades. Cardiac murmurs were heard with considerably greater frequency among the cases of earlier typhoid, and in the same cases during the attacks, than in individuals who had not had typhoid fever. In eight cases in which, on discharge from the hospital, the heart was considered normal, subsequent examination disclosed the existence of hypertrophy with mitral insufficiency. In one case there was possible mitral stenosis, in one aortic insufficiency, in one general arteriosclerosis with hypertension. In one case an aortic diastolic murmur was present four months after discharge, but this had disappeared five months later. Those patients in whom the pulse, during the course of the disease, was remarkably rapid or irregular exhibited in general, on later examination, a blood-pressure above the average common for the cases of earlier typhoid fever. In other respects, however, their condition differed but little from the general run of cases. Those cases in which a systolic murmur, at the apex of the heart, was observed during the attack exhibited later an increase in the blood-pressure and in the size of the heart, as compared both with the mean of the observations made upon the same cases on admission to the hospital and with the general average for the cases of earlier typhoid fever. Nearly one-quarter of the cases in which, during the attack, systolic apical murmurs were detected exhibited on later examination evidences of organic heart disease. Indeed, the majority of all the cases of organic cardiac lesions among the 183 cases of earlier typhoid fever were derived from this small group of thirty-one cases.

* * *

The evidence presented furnishes a further reason, if such were needed, for the institution of any and all legitimate measures directed to the prophylaxis of typhoid fever, and in the event of its development for the adoption of all precautions and therapeutic procedures calculated to avert cardiovascular complications.

MEDICAL NEWS.

RECENTLY CREATED DOCTORS.

DETROIT COLLEGE OF MEDICINE.

Robert C. Allen, Charles H. Anderson, Lester W. Bellows, Albert Bernstein, Julius E. Block, Roscoe Broughton, Jr., George G. Burns, Thomas J. Callan, Clarence D. Chapin, George W. Chisholm, Guy M. Claflin, Oscar G. Cowley, David A. Dickson, Theophilus C. Dolan, Thomas J. Dowling, Charles W. Eastman, George H. Ensing, Claude B. Erwin, John O. Gaston, Arlon H. Gifford, Henry G. Harris, Edward H. Hayward, Randolph J. Hersey, Ernest H. M. Highfield, Jesse J. Holes, George A. Holliday, Richard G. James, George E. Johnson, Karl H. Kellogg, Morris B. Landers, Henry W. F. Law, William C. Lawrence, Charles B. Leonard, C. Bradford Lundy, Alexander J. Mackenzie, John Masselink, Edward G. Martin, Calvin McCarrol, James McCarroll, Daniel McFadyen, James F. MacGeagh, Tom C. McIntyre, Charles H. McLean, Martin H. Nester, Stanley O. Newcomb, Otis E. Newsome, Kenneth Noble, Howard W. Peirce, Charles F. Pequegnot, Otto L. Ricker, Robert A. Risk, E. Eugene Robb, George P. Sackrider, M. J. Schwanz, M. D., Benjamin A. Shepard, De Witt L. Sherwood, Charles E. Skinner, Henry V. Smith, Ralph C. Smith, Okey M. Staats, Ray C. Stone, Philander B. Taylor, Jr., Arthur Turner, George H. Voelkner, Mason E. Vroman, Joseph Wantoch, Felton D. Watts, Bryant Weed, Robert E. Weeks, Archibald B. Wickham, John T. Wood, Charles O. Woodbridge.

UNIVERSITY OF MICHIGAN.

Edward W. Adamson, Axcel E. Anderson, Edward M. Anderson, Kathleen Anderson, Abel J. Baker, David E. Beardsley, Arthur K. Bennett, Charles L. Bennett, Adolphus L. Biggs, Thomas F. Birmingham, Ernest B. Bradley, Stephen D. Brazeau, Dexter A. Buck, William H. Buskirk, William G. Carhart, Arthur J. Carlson, Addison B. Clifford, Otis M. Cope, Charles V. Crane, William H. Crede, John H. Crosby, Irving J. Cross, Jenny E. Crozier, Clara M. Davis, John J. Donoghue, Phebe VanV. Doughty, Guy M. Dunning, Ward Ellis, William H. Enders, Curtis A. Evans, Earl H. Foust, Cyrus B. Gardner, William C. Gibson, Edward C. Greene, William P. Greene, Cyril H. Haas, William W. Hale, Elizabeth A. Hawley, Samuel R. Haythorn, Herman A. Helming, Charles M. Hensley, Lewis S. Hodges, Emile C. Houle, Maro F. Hunn, Samuel K. Jamgotchian, Fred A. Johnson, Roy H. Johnson, Harrison W. Jones, Charles F. Jump, David M. Kane, Charles E. Keeler, Guy C. Keller, Lee E. Kelsey, William H. Kennedy, Mary A. Killeen, Carl J. Larson, Clyde A. Leonard, Iva M. Lickly, Stellar R. Light, Jesse D. Mars, Albert H. Miller, Owen J. Mink, James F. Munson, Norman D. Murphy, Byron D. Niles, Harry M. Nuttall, Lydia M. O'Harrow, Christopher G. Parnall, Alex H. Pearson, Elsie S. Pratt, Harcourt H.

Ptolemy, Roy W. Quick, Elias W. Reed, George G. Richards, Bertolet P. Rosenberry, Mary L. Rosenstiel, Augustus H. H. Roth, Guy V. Rukke, Walter A. Scott, George A. Seybold, Francis M. Shook, Harold L. Simpson, William B. Skelton, Frank W. Smithies, Charles D. Stofer, Albert E. Stripp, Charles T. Sturgeon, Earle R. Swift, Charles F. Tenney, Jr., Bert Thomas, Leland H. Tower, William P. Ultes, Elmer C. Unckrich, Don C. Urie, John W. Vaughan, Charles C. Walker, Ernest C. Weirick, Carl H. Weisman, Clarence R. Wilcox, William W. Wright, Alford E. W. Yale.

MINOR INTELLIGENCE.

TWENTY-THREE physicians were chosen as candidates for the mayoralty in as many French cities at the recent elections, and of these only two were defeated.

THE authorities of Saint Luke's Hospital, of New York, have planned an addition to the present building. The annex will be ten stories high and will have a roof garden.

DOCTOR CHARLES LANPHIER PATTON, associate collaborator in the department of Gynecology in this journal, was married to Miss Alice Jess, of Springfield, Illinois, Tuesday evening, June 21, 1904.

BUFFALO is to have a new hospital for the treatment of contagious diseases. The buildings are now in the process of erection and when completed will cost in the neighborhood of fifty thousand dollars.

PLANS have been accepted and the contract awarded for the construction of an insane hospital annex to the Saint Louis poorhouse. The new structure will cost in the neighborhood of forty-seven thousand dollars.

A NEW ward has been added to the Watertown (Illinois) Hospital for the Insane, which involved an expenditure of one hundred forty thousand dollars. The institution can now accommodate twelve hundred patients.

ONE wing of the hospital building conducted by the Sisters of Saint Anne, in Chicago, has been completely isolated for the treatment of tuberculosis. The building was erected only a few months ago and is modern in all its appliances.

AN ordinance has been passed by the Board of Health of Hoboken, New Jersey, and sustained by the New Jersey Supreme Court, requiring barbers to employ sanitary methods in cleansing their instruments, the measure being calculated to prevent the spread of contagious skin diseases.

PHILANTHROPISTS in Philadelphia formulated plans recently for the erection of a hospital, to be known as the American Oncologic Hospital, which will be devoted exclusively to the treatment of cancer. A location for the buildings is being sought, and application for a charter of incorporation will shortly be made.

AT the annual meeting of the New Jersey Dental Association it was resolved to petition Congress to create a corps of commissioned dental surgeons, whose rank shall correspond to that accorded medical army officers.

THE negro in the West Indies is said to be immune from malaria. The negro child, during the first year of life, usually contracts the fever and by repeated attacks during an early period of existence acquires immunity.

SAINT PETERSBURG is threatened with an attack of Asiatic cholera. The disease made its appearance during the first week in August. The number of deaths from the disease is not known as no official figures were announced.

AN epidemic of typhoid fever is prevalent in the Borough of Bronx, New York. The persons afflicted are chiefly Italian laborers, who have been employed in constructing the Jerome Park Reservoir. The source of the outbreak is unknown.

THE epidemic of smallpox, from which the village of Dresden, New York, has been suffering, became so widespread during the first part of August that the entire village was quarantined. Over five hundred persons were affected by the isolation.

THE new Saint Francis Hospital, of Kewanee, Illinois, was dedicated on July 24, with appropriate ceremonies, Bishop Spalding, of Peoria, Illonois, delivering the dedicatory address. The building was erected at a cost of one hundred thousand dollars.

DOCTOR WALTER LINDLEY, of Los Angeles, has been elected dean of the Medical College of the University of Southern California. The doctor was one of the organizers of the school and is professor of gynecology therein. He is also editor of the *Southern California Practitioner.*

AT the last meeting of the Ohio Legislature an appropriation of thirty-five thousand dollars was voted to establish a hospital for the treatment of incipient tuberculosis. A commission was appointed to secure a suitable location for the buildings and to prepare plans for their construction.

THE Board of Directors of the Jewish Hospital, which is in process of construction in New York city, is endeavoring to collect sufficient funds to complete the building. A benevolent friend has agreed to contribute twenty-five thousand dollars, providing a like sum can be raised by general collections.

THE following officers were elected at the meeting of the American Medical Editors' Association, which occurred on June 7, 1904: President, Doctor Harold N. Moyer, of Chicago; vicepresidents, Doctors James Evelyn Pilcher, of Carlisle, Pennsylvania, and Otho F. Ball, of Saint Louis; secretary, Doctor Joseph McDonald, Jr., of New York City.

THE trustees of Western Reserve University propose the establishment of a dispensary for the treatment of tuberculosis, in connection with the college of medicine. The patients will be located in houses provided by the propagators of the scheme, and will be educated along hygienic lines.

THE authorities of Manitoba Medical College, at Winnipeg, are considering the erection of a new college building, the present structure being inadequate for the growing needs of the institution. The advisability of inaugurating a five years' course, beginning with next year, is being considered.

PLAGUE is reaping such a frightful harvest in Teheran that Europeans are abandoning their possessions and fleeing from the city. Several hundred deaths are reported daily, and the Russian officials have ordered sufficient frontier defense to ensure protection against the importation of the disease.

DOCTOR NELSON W. WILSON, of Buffalo, New York, reports an interesting case of gonorrhea in a lad of nine years. Patient was unable to urinate for about fourteen hours prior to entering the hospital. The gonococci disappeared in the sixth week of treatment. The boy stated that the disease was contracted through sexual intercourse with a girl of twelve.

THE health officials of New York city will expend $10,000 in investigating the contagiousness of pneumonia, which has been very prevalent in that city during the past year, and peculiarly confined to definite localities. The investigation was aroused by the desire of certain individuals to require house fumigation, but if this is done the question of contagiousness must first be established.

DOCTOR NOEL UNSWORTH, a young English physician engaged as assistant inspector of the Sanitary Department of the Egyptian Government, died recently from bubonic plague, which he contracted in that country, after an illness of three days. Doctor Unsworth has been engaged in sanitary work in Egypt since 1902, in which year that country was swept by an epidemic of cholera.

THE meeting of the American Medico-Psychological Association, which was held in Saint Louis, May 30 to June 2, resulted in the election of the following officers for the ensuing year: President, Doctor E. A. Burgess, of Montreal; vicepresident, Doctor C. B. Burr, of Flint; secretary-treasurer, Doctor C. A. Dent, of New York. The society will meet at San Antonio, Texas, in 1905.

IN accordance with the action of the National Association of Dental Faculties, the dental department of the University of Michigan has returned to a three-years' course of study after having maintained a four-years' curriculum for a period of two years. Many of the leading schools of the country persistently fought to retain the longer course, but without avail. It is to be hoped, however, that the time will come when a four-years' course will be permanently established.

MRS. R. H. MCELWEE, of Lake Forest, Illinois, has donated a sum sufficient to construct an extension to the Home for Destitute Crippled Children of Chicago. The annex, which will cost in the neighborhood of $40,000, will accommodate about eighty children, and will be devoted more especially to orthopedic cases.

THE Kentucky Board of Health is waging a war against the plush seat covering ordinarily used by the railway and street car systems of the country. The plush covering has been placed under state ban and the board will indict every railway management that does not henceforth employ leather or cane as seat covers in coaches.

DURING the last week of July three hundred fourteen milk dealers in Chicago were convicted on various charges. The offenders most severely punished were those who sold a low grade of milk after having been cautioned by the officials, and those who employed preservatives, the fine in these cases being fifty dollars and costs.

ARTICLES of incorporation were issued in July for a new Swedish hospital which is to be erected near Washington Park, Chicago. The corporation is capitalized at fifty thousand dollars. The old hospital can accommodate thirty persons, in the building now in service. The new structure will be known as the Washington Park Hospital.

ONE hundred fifty persons have thus far met death on the Swiss and French Alps this season. The practice of climbing the mountains without the aid of guides has become so common with amateurs that the Swiss government is contemplating the passage of a law for its prohibition. The mortality this season has been higher than in any previous year.

DOCTOR GEORGE F. SHRADY has resigned the editorship of the *Medical Record* after an extended service of over thirty-eight years. Doctor Shrady has been a devoted worker in the field of medicine as well as in the field of journalism. He was one of the surgeons at the bedside of President Garfield during his last days. His successor on the editorial tripod is Doctor Thomas L. Stedman.

THE National Association for the Study and Prevention of Tuberculosis, which was organized at Atlantic City on June 6, has secured offices in the Associated Charities Building, in New York, and will begin an active campaign at once. The plan of the association is to expend $50,000 annually to conduct an educational crusade, which will be confined mainly to imparting sanitary ideas to the public.

ONE of the baths recently constructed at a cost of $80,000, as a unit of New York's public bath system, has been declared unsanitary and accordingly the plumbing will be overhauled. The bath was in operation for only four days, but owing to imperfect drainage it was closed to the public until larger piping could be installed. The result was especially discouraging to the propagators, inasmuch as the baths tend to improve sanitary conditions among the poor, who largely patronize them.

Plans have been completed by the Surgeon-General of the navy for an outdoor tuberculosis camp for afflicted sailors. A location has not as yet been chosen but the idea is not to have the camp too far from the seashore or at an altitude too high to prevent the men from returning to ship duty. Army patients will be entitled to treatment, as the privileges of the army camp at Bayard, New Mexico, are extended to consumptive sailors.

RECENT LITERATURE.

REVIEWS.

PROGRESSIVE MEDICINE.*

We are pleased to announce that this excellent publication has been received for March. We still feel incompetent to speak too highly of the merits of the work. We have never been permitted, because of its excellency, to say aught against it. It is truly a valuable acquisition to any physician's library. Indeed, it may be considered a current library in itself.

To those who are unacquainted with "Progressive Medicine" we wish to detail its mission. The idea of the publishers is to furnish to the profession a resume of the year's advances and best contributions to medical progress. They accomplish this by securing as editor a man whose ability is known to all—Doctor Hobart Amory Hare—and as contributors men who stand in the front rank of the profession, men who can appreciate the needs of the physician of today and put thought into their work so that the proper interpretation of an original paper is given. This alone is enough to make the series one to be sought after.

The March volume embraces the following subjects: "Surgery of the Head, Neck and Throat," Charles H. Frazier, M. D.; "Infectious Diseases, including Acute Rheumatism, Croupous Pneumonia, and Influenza," Robert B. Preble, M. D.; "The Diseases of Children," Floyd M. Campbell, M. D.; "Laryngology and Rhinology," Charles P. Grayson, M. D.; "Otology," Robert L. Randolph.

By means of a special edition with paper covers the publishers have been able to reduce the price of "Progressive Medicine" so that it is within the reach of all.

*Volume I, March, 1904. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 337 pages, 7 illustrations. Per annum, in four cloth-bound volumes, $9.00; in paper binding, $6.00, carriage paid to any address. Lea Brothers & Company, Publishers, Philadelphia and New York.

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ORIGINAL ARTICLES.

MEMOIRS.

INTRACRANIAL TUMORS IN THE INSANE, WITH A REPORT ON TWO CASES.

By IRWIN H. NEFF, M. D., Pontiac, Michigan.

ASSISTANT PHYSICIAN IN THE EASTERN MICHIGAN ASYLUM FOR THE INSANE.

Pathologists have generally agreed that cerebral tumors are occasionally found in insane subjects, when the clinical history is not suggestive of brain growth.

Enrich ("Two Cases of Intracranial Tumors," *London Lancet*, February 20, 1897) says that "intracranial tumors form but a small percentage of the cases occurring in asylum practice. Their comparative rarity has frequently been commented upon—more so, as the institution, which he represents, was the haven in which only sufferers from intracranial disease, or their results, were treated."

During the past few years several valuable contributions have been made to this subject. A review of the reports of asylum pathologists shows quite a uniformity of opinion as regards the percentage of cases of insanity, showing an intracranial growth after death. It would appear that the consensus of opinion is, that two per cent of all insane patients have a brain tumor. There are no statistics, however, to show whether or not the insanity was entirely dependent on the growth.

Owing to the difficulty in securing a subjective history, and, also, to the resistance often offered by the patient to the necessary examinations, cases of brain tumors in the insane are quite frequently overlooked or unrecognized during life.

A review of Blackburn's recent report on this subject ("Intracranial Tumors among the Insane") shows that only seven out of the twenty-nine cases were diagnosed during the life of the individual. Considering these conditions, it is not surprising that such cases are at times diagnosed as anomalous cases of paretic dementia, epilepsy, syphilitic brain disease, or more frequently conveniently relegated to the class of organic insanities.

Attempts have been made to associate the character of the mental symptoms with the situation of the growth. Although noteworthy work has been done in this line by Brammel (*Brain*, Volume XXII, 1899), Phelps (*American Journal of the Medical Sciences*, April, 1902), and others, there have been too many clinical contradictions to justify us in accepting their conclusions in entirety.

Vigoroux (Abstract, *Journal of Nervous and Mental Disease*, Volume XXX, page 505), after a careful review of the opinions or writers on this subject, answers the question negatively. He believes that the psychosis may, or may not, accompany a tumor in a given location, and that the nature of the symptoms is independent of the nature of the tumor, and may be the result of accidental conditions. The author also concludes that "when a true psychosis,is found associated with the cerebral tumor, the association is simply a coincidence.

The following two cases have some interesting points in common. Both patients were pronounced "insane" at the time of admission. The psychical condition of Case I was thought to be dependent on syphilitic brain disease. The mental symptoms of Case II were believed to be due to epilepsy. A short time after admission to the asylum, the diagnosis of "brain tumor" was made in Case I; but its exact site, which proved to be basal, was undetermined. In Case II a large subcortical sarcoma, involving one entire hemisphere, and extending to the opposite side, was recorded as an anomalous case of paretic dementia; but during the latter months of patient's illness a brain tumor was suspected. Both cases had a clear history of syphilis, and at the autopsy neither of them showed the characteristic lesions of luetic brain disease. Both cases also presented rather unusual mental symptoms, which are considered in the respective summaries.

Case I.—W. M. R. Aged thirty-eight; divorced; American birth; occupation, laborer; was admitted to the Eastern Michigan Asylum, October 1, 1895. His family history was negative as regards insanity or any constitutional disease, which would bear on patient's trouble. Patient had always been of exemplary habits. Twelve years ago he had contracted syphilis innocently, which was followed by well-marked secondary symptoms. His present illness began four years previous to admission. Primary symptoms consisted of severe attacks of vertigo, and were at times so severe as to totally incapacitate him. Occasionally he had attacks, during which he would perform his work (which at that time was that of a driver) automatically; and he also complained of severe headaches, which were general, and which would last for some hours. During the past two years the above symptoms have been exaggerated. He frequently lost his way, and occasionally was completely disoriented. This loss of orientation was coincident with severity of head pain. Symptoms rapidly progressed, and during the past year he has been considered "demented." One year ago he had a general convulsion, which was "epileptiform" in character. After the first convulsion he was much confused. Similar attacks occurred frequently, the average being about four per month, and seemed to add to his mental and physical enfeeblement. Five months ago he began to complain of blindness, and anaurosis was complete in three weeks.

Examination at the time of admission elicited the following facts: His psychical condition was one of enfeeblement, characterized by amnesic defects, indifference, and a considerable degree of confusion, which was thought to be secondary to the dementia. Physical examination was negative as regards any constitutional trouble, excepting symptoms which were referable to cerebral disease. The neurological syndrome was as follows: Equilibration was markedly disordered; gait shuffling, and suggestive of incoordination. The superficial and deep reflexes were markedly exaggerated. Pupils were immobile. Ophthalmoscopic examination showed a bilateral and pronounced optic atrophy, with distention of veins and large patches of choroidal atrophy.

During the first six months of his residence in the asylum, patient had twenty epileptiform seizures. Ten of these were localized convulsions, affecting the left side of the face and corresponding arm, the left hand being involved in spasm. During these attacks head and eyes were deviated to the left side, and near the end of the attack slight lateral nystagmus was present. Loss of consciousness was not always complete, and no paralysis could be detected after the seizures. The general epileptiform seizures were characterized by profound coma, general twitching, without signal symptoms, and temperature involvement, the maximum temperature being 102°. During all this time patient complained considerably of headache. A decided remission was noted in "head pains" for several days following the epileptiform attacks. During the early part of October, 1896, a left hemiplegia suddenly developed, which was spastic in nature.

Examination at this time resulted as follows: There was complete left hemiplegia, with involvement of left side of face. The left arm was in a condition of flexion, with adduction and slight flexion of left hand. The left leg was held in a condition of flexor spasm, with marked extension of foot. Paralysis was spastic in nature, but could be partially reduced by passive movements. The deep reflexes on the paralyzed side were markedly exaggerated, with a bilateral, patellar and ankle clonus—more pronounced on the paralyzed side. Sensory examination at this time was unsatisfactory, on account of the mental condition of the patient. Subsequent examinations, however, indicated that there were patches of anesthesia on the calf of the paralyzed leg, and on the extensor surface of thigh.

The psychical condition at this time showed considerable variability in symptoms. At times he was quite irritable, expressed much discontentment, and there was marked emotional instability. Amnesia was also present, and this continued during the entire course of illness. Patient continued to complain of headache, and this appeared to be general. Marked hyperesthesia of scalp was found over the left parietal region, and a pronounced tenderness on percussion was elicited over the region of the left frontal lobe. These symptoms were permanent, and were frequently elicited during the entire course of patient's illness. It was noticed at this time that patient would frequently sleep for long periods, and could not be aroused. Active delirium occurred occasionally, which was coincident with attacks of cephalalgia. During these attacks of delirium there was marked evidence of both auditory and visual hallucinations. Patient would also complain of "water dripping from his nose and mouth." This sensory involvement was always present during the attacks of delirium.

Examination March 11, 1898, showed no pronounced change, excepting that spastic conditions in left arm and leg were more developed. Left leg was now held in a condition of slight flexor spasm, and left foot was in a state of talipes equino-varus. Patient's walk was now distinctly hemiplegic. No atrophy of paralyzed muscles could be determined. At this time he complained of severe headache, and located the pain in the parietal and frontal region of left side of the brain.

During January, 1899, a note is made that "the substance of many examinations is as follows: Tenderness in percussion over the right parietal region, in an area of a circumference of four inches. Lessened left hand-grip; muscles of left arm flabby. Comparative measurements of arm and legs show slight decrease of one centimeter in the left calf. The left foot is in a condition of talipes equino-varus. Slight spasm of flexor of leg, which can be reduced by manipulation. Movements of leg when in a recumbent position limited, and there is evident paralysis. Sensory examination shows hyperesthesia to touch, pain and temperature below left knee, more marked over muscles of calf. Walk is distinctly spastic and paralytic. Examination of reflexes: Exaggerated knee-jerks, left ankle clonus. Cutaneous reflexes were variable. Muscular reflexes, all over body, active.

In April, 1899, examinations resulted as follows: Tenderness over right frontal region, extending from two centimeters over eye, backward three centimeters, and covering a small area. Examination of eyes shows no marked differences. No disorder of facial movements. Tongue protruded straight. Examination of the arms gives the following measurements: Right and left 30, 30; 26, 26; 20, 20. Muscularity good. All movements possible. Left hand-grasp weakened. Excepting this weakness of hand muscles, there is no paresis of arm. Elbow and wrist jerk active. Legs: Muscularity good; slight atrophy of muscles of left leg, resulting probably from disuse. Measurements: right and left, 51, 49; 34, 31; 26, 25. Movements of left leg restricted; marked weakness of flexors and extensors—drop foot. Knee: jerk of right leg appears easily exhausted; left leg exaggerated. Left patellar clonus; slight left ankle clonus. Plantar reflexes exaggerated. Other cutaneous reflexes active. No tremors noted. Sensory examination: hyperesthesia, evidently dependent upon general mental condition. There is possibly analgesia, comparative, in left leg, over calf muscles. This cannot be accurately determined. Gait: paretic and spastic, characteristic of paresis of left leg. There is slight transitory spasms of flexors in left leg, more evident during movement. Speech is correct in order and arrangement. Electrical examination shows no quantitative or qualitative changes.

Patient shows changes in personality, which occur irregularly. At times he is in a condition of elation; talks freely of remote events, and is happy and jovial. On other occasions he is fault-finding and irritable, makes unfounded complaints of abuse, and there is defective judgment and difficulty in concentration; on former occasions associations are much quickened; when the latter symptoms supervene there is at times considerable apathy. Excepting slight headache, with maximum intensity in right frontal region, patient complains of no "true pain." Examination at this time showed the first involvement of the special senses. This consisted of complete anosmia, which appeared to be permanent.

During 1900, the symptoms were practically the same. Psychical changes were headache and delirium, and symptoms noted above occurred quite frequently. No change was noted in character of paralysis. Epileptiform seizures, which were now general in character, occurred at intervals, and were often followed by an exaggeration of mental symptoms. During September, 1902, patient became jaundiced, which rapidly deepened. Examination at this time was suggestive of hepatic cirrhosis.

In November, 1902, a note is made as follows: "Mental and physical examinations show the following: Mental characteristics as detailed above, consisting of emotional instability, loss of self-control, and periodical attacks of furor, are unchanged. Physical examination: Hemiplegic symptoms are present as noted above, with a slight increase in flexor spasms of legs. Otherwise there is no objective sensory trouble. Subjective sensations consisting of 'acro-paresthesia' are unchanged."

During the early part of October, 1903, it is noted that "mental enfeeblement has apparently increased, and periods of emotional instability are not so frequently seen. Patient appeared to be most of the time in a 'stuporous' condition, and at times it was impossible to arouse him. During the latter part of October, 1903, patient was for a week in a state of active delirium, and during this time experienced several severe epileptiform seizures. Symptoms of delirium continued quite active, and visual and auditory hallucinations were pronounced. Coma developed two hours preceding death, and rapidly increased. Patient expired while in a comatose condition. The immediate cause of death was supposed to be directly due to 'increased intracranial pressure.'"

POSTMORTEM TWELVE HOURS AFTER DEATH.

Examination of head: Calvarium shows some asymmetry, there being some flattening of vertex and an unusual development of both occipital protuberances; the right being more markedly affected. A small ecchymosis is noted beneath the left frontal protuberance, which is directly dependent upon a bruise. On opening the calvarium there is found to be an adhesion of the dura mater, which is stripped with difficulty. Pacchionian bodies are enlarged, with adhesions along both the petrosal and superior longitudinal sinus. The brain is markedly injected, and accidental cutting into the ventricle causes a marked effusion. Macroscopical examination of the brain is as follows: Convolutional development appears to be normal, although there is marked prominency of hemispheres in occipital region, corresponding to asymmetry of skull. Examination of the base shows a large tumor, immediately beneath the left temporosphenoidal lobe and attached to the basal dura mater. Further examination shows that there is partial absorption of the left lesser wing of the sphenoid, and an extension into the ethmoidal cells on both sides. The same tumor extended over the right crus, evidently exerting pressure. Considerable difficulty was experienced in dissecting the tumor from the bone, and all of the mass could not be extracted. Further examination of the brain was postponed, pending hardening.

Examination of the abdominal cavity discloses a suppuration of the gall-bladder, with a few stones, which were not impacted. Liver is retracted, and evidently cirrhotic. A section is reserved for examination. Examination of abdominal cavity is otherwise negative.

Pathological specimens consist of (1) entire encephalon, with tumor attached; (2) a portion of the tumor, which was detached from the brain growth and originated from the basal dura mater and lodged in sella turcica; (3) a portion of the liver.

PATHOLOGICAL REPORT.

One portion of the tumor of the brain lay in the median line, directly in front of the corpora mammillaria. On removing this, there were only slight fibrous, connective adhesions to the brain substance. It was found that the optic chiasma had been entirely absorbed, and microscopical examination of the tumor in this part failed to show any trace of that structure.

Following the growth over to what formed the largest portion, it was found to have grown into the brain substance on the other side of the lateral ventricle. The growth here measured forty-two millimeters across, and was nearly round. After dissecting it out, it was found to have absorbed the brain substance up to, but not into, the lateral ventricle; the lining membrane of which had been carried in by the growth, until it was in partial contact with the inner wall.

The growth had also followed the line of the ventricle to its anterior end, and here the brain substance was only about half an inch thick. It had formed a sort of pocket here, and in this was a rounded, comparatively hard portion of the neoplasm. This was the only part that showed the cells in an undegenerated condition, and was probably the youngest part of the growth. After removal the neoplasm measured, roughly, forty-two millimeters across, fifty-four millimeters in its longest diameter, and averaged thirty millimeters thick.

It is interesting to note that in no place had this growth infiltrated the brain substance; neither had it set up an acute inflammatory reaction as far as could be made out; although there had been some chronic irritation, which was plainly shown by the lining membrane of the lateral ventricle, in which there was no appearance of ependyma or epithelium; but a delicate fibrous tissue was all that could be made out. There were several bands across the cavity of the ventricle, at the anterior end; but they were soft, and almost gelatinous. The growth had not penetrated the ventricle at any point.

The portion in the median line, which had absorbed the optic chiasma, had also absorbed the floor of the third ventricle; but there was no adhesion to any part of the brain substance. The small nodules which had apparently been removed from the bone were examined microscopically, as well as the growth in various places, and the structure was found to be the same throughout.

MICROSCOPICAL EXAMINATION.

Nearly the whole of the tumor is degenerated, even the nuclei of the cells having become disintegrated in the part imbedded in the brain substance. There was, however, a small rounded mass, which was comparatively hard.

The growth is a round-celled sarcoma having a very large blood supply. The cells vary in size, some being much larger than others; and there are some multinucleated cells among them. There is no fibrous stroma, and the vessels run in direct contact with cells. There is a slight amount of fibrous tissue on the surface, forming a capsule; but this is not continuous, or well-marked, and in some places is entirely absent. The blood-vessels are mainly capillaries of large caliber; but there are some which may be called sinuses, and they are mostly full of blood, and this in the degenerated portion of the growth. There is no apparent reason for this degeneration; but it is a condition often found in sarcoma.

The condition of the liver was as follows: Glisson's capsule is considerable thickened. Throughout the tissue the hyperplasia of the interlobular, connective tissue, is very marked, and in those parts carrying large branches of the hepatic artery, the increase is visible to the maked eye. There is evidence of active growth of this tissue all through the sections, and this and its extension into the lobules is apparent in some places. It is in fact an early stage of cirrhosis.

The capillaries are dilated througout, and in many parts the liver cells are compressed, and smaller than normal. All through the sections there are small particles of brown pigment, mostly in the cells; but in some cases the capillaries appear to be full of them; they probably represent the bile. There is no appearance of chornic endarteritis in the large branches of the hepatic artery, as might be expected from the history. The small branches of the hepatic artery have become torturous from contraction of the newly-formed fibrous tissues.

The amnesia, irritability, stupor, inability for concentration, the increasing moral perversion, the marked defective self-control, and the rapidly alternating emotional tone, were thought to indicate a tumor of the frontal lobe.

The subsequent paralysis was believed to be due to involvement of the parietal lobe. This supposition was supported by the fact that, primarily, the epileptiform seizures were localized, and that the permanent paralysis, involved the convulsed area.

A review of the clinical and pathological history of the case compells us to regard these symptoms as due, in great part, to the increased intracranial pressure, and not dependent on actual destruction of brain tissue.

Collins ("Treatment of Nervous Disease," page 193) says that psychical disturbances of variable character and degree, depend somewhat upon the location of the tumor; but more particularly on the rapidity of the development, and the intensity of intracranial pressure. When intracranial pressure develops rapidly, and is of profound intensity, there is almost always a marked degree of lethargy, stupor, and progressive dementia.

Oppenheim ("Diseases of the Nervous System," page 608) says that focal symptoms are not of much local diagnostic value, if the symptoms of general cerebral pressure are very pronounced.

The case is particulary interesting, as it demonstrates that an intracranial pressure can be directly responsible for, not only the general symptoms of brain tumor, but also for "focal symptoms," which are commonly described to localized lesions.

The pathological résumé is as follows: The neoplasm evidently started from the membrane, somewhat about the center of the middle cerebral lobe, and grew in two directions; the main portion growing into this lobe, and carrying the line of the lateral ventricle before, so that the ventricle was reduced to a narrow slit. In fact, the two surfaces were in contact in some places, with vans extending across the cavity. This part of the growth extended into, and "hollowed out" the middle cerebral lobe at the anterior end, so that there was only one-half an inch of brain left. The other portion of the neoplasm grew superficially to the right, and into the sphenoidal, and as it grew, it entirely absorbed the optic chiasma. In no places had the growth infiltrated the brain tissue. It had simply caused absorption from "pressure," and had as is unusual in these tumors, a definite capsule, and was composed of fibrous tissue, although very thin.

* * *

Case II.—C. L. C., male, aged twenty-nine; single; occupation, railroad switchman; common school education; admitted to the Eastern Michigan Asylum, December 20, 1898. His father was addicted to alcoholic excesses; mother of "very nervous" temperament. Patient has been addicted to alcoholic excesses for some years, and twelve years ago he contracted syphilis, for which he received antisyphilitic treatment. His present illness began three months before admission. While trying to control a refractory horse, he suddenly fell unconscious. There is presumptive evidence that he was kicked by the horse. Patient remained unconscious for one hour, and gradually recovered. For four days succeeding the attack he appeared to be in a normal mental condition. He then had a seizure of similar character, but remained in a condition of stupor for several hours. Since that time he is not thought to have been right in mind. He has appeared suspicious of members of his family, and accused his family of "conspiring against him," and making efforts to take his life. Actions also would indicate that he has visual hallucinations. There was persistent insomnia and slight loss in weight.

At the time of admission physical condition was as follows: There was slight mental exaltation, with some emotional perversion. No signs of mental enfeeblement, however, were elicited. Patient had a good appreciation of condition, and was able to give a good and concise account of illness.

Physical examination resulted as follows: Knee-jerks were exaggerated, and there was bilateral ankle clonus. Pupils were active. Other organic reflexes were normal; cutaneous reflexes showed the usual variation.

Ophthalmoscopic examination showed cuppings in both eyes, with degeneration in nerve endings. Nasal margins of both discs were obscured by enlarged blood-vessels. Hyperemia was marked over entire retinal area. Coordination was good all over body, there was no paralysis, and examinations for disorders of equilibration and abnormalities of gait were negative. Examinations of respiratory and circulatory systems were entirely negative. Bodily functions appeared to be in a normal condition, and examinations bearing on the same were of negative value.

The following history of his trouble, which was verified by information obtained from others, was given by patient: On October 12 last, he suddenly fell unconscious, and continued in this state for half an hour. There was no premonitory symptom, no epileptic manifestations during attack—except unconsciousness—and no postepileptic symptoms. After coma had passed off patient resumed his ordinary occupation, but four days after first attack, a second and similar attack developed. After this attack, patient was somewhat confused, but this soon passed away. Application was made for his admission here, but he was removed to Dearborn. During his stay in that institution he had two attacks, which he describes as follows: Both attacks developed without any assignable cause, and were characterized by slight dizziness—which was apparently subjective—and loss of sense of locality. Patient states that things looked strange to him, and although he often found himself in familiar places, he believed that this was automatic. He also acknowledges that several times ideas have suddenly developed in his mind, that he should do certain things. To a great extent these have been under his control. Excepting the four attacks mentioned above—two with unconsciousness, and two without—patient does not describe any abnormal symptoms.

During the first six weeks he was in the asylum there was but little variation in his condition. He at times complained of insomnia, but this readily yielded to treatment. No seizures occurred, and patient expressed himself as anxious to recover, and believes that his trouble was due to the development of epilepsy.

In February, 1899, the following note is made: "Last night he suddenly experienced a severe epileptiform convulsion, immediately succeeded by three of a similar character. These seizures were of the nature of grand mal, with signal symptoms of flexion of left arm, followed by deviation of head to left side, and conjugate deviation of eyes. The remainder of the body is affected in the following order: left leg, right side of face, right arm, right leg. Maximum duration of clonic stage, four minutes. Preepileptic cry present, with resulting stupor."

During the next three days four epileptiform seizures of similar character developed. Following these there was immediate loss of consciousness, and postepileptic syndrome consisted of several attacks of frenzy, during which there was obscured consciousness, visual and auditory hallucinations, and patient expressed extreme suspicion, being fearful that preparations were being made to kill him. After attacks of frenzy, patient was able to tell of many events, which occurred during his mental attacks, but was unable to remember the occurrence of convulsions. During the following week several convulsions occurred, which were localized in left arm, left leg, and left side of face. On several occasions an aura was declared, consisting of a "teaming sensation" in left arm, which appeared a few minutes before the seizure. Efforts to abort the attacks were unavailing. Preceding attacks patient complained of intense frontal headache, and after the attacks complained of considerable exhaustion. After this series of convulsions there appeared to be slight paresis of left arm and leg.

Sensory examinations were always negative, and no involvement of the special senses was ever detected. Frequently after recovery from the seizures, he appeared quite depressed, and somewhat confused. At this time patient was put on treatment of iodid of potassium, which he took in large doses, without production of iodism.

On March 31, 1899, the following note is made: "Succeeding a convulsion he remained in bed in a semistuporous condition for five hours, and was much confused. There is senseless repetition of words, with a tendency to echolalia. He is kept in bed. This confusion has continued with intermittency. Yesterday he suddenly became quite apprehensive: declared that poisons were placed in his food, and that certain individuals were endeavoring to murder him. These attacks of apprehension occurred at intervals, and were accompanied with semiunconsciousness. During the interval he has talked quite intelligently about his condition, but showed but little realization of what occurred during the attacks."

For the next six months patient's condition was practically the same. Fourteen convulsions of a general type, and five convulsions, localized, and having the same character as mentioned above, were declared. After many of these seizures he was in a state of active delirium, the prominent symptoms being: the extreme and pronounced suspicion, visual and auditory hallucinations, and considerable motor activity. Complained at times of headache, which was general, and which was more intense before the occurrence of seizures. During all this time, while in a condition of delirium, and in the interparoxysmal state, there appeared to be fixed delusions of poisoning and persecution. The contents of the delusion of persecution showed no variation, and at this time was fairly well systematized.

In January, 1900, patient's condition was practically the same. Convulsions occurred in a series, and were now general and localized. During many of them the signal symptom was contraction of flexor muscles of left forearm, followed by contraction of the entire arm, and succeeded by involvement of left leg and left side of face, with deviation of head to the right side, and conjugate deviation of eyes.

In June, 1900, it is noted that several attacks of status epilepticus were declared, during which patient was in practically the same condition as noted before. Epileptiform seizures, limited to the right arm and the right leg, have occurred. During attacks temperature changes were always noted, maximum temperature being 101°.

In November, 1900, a note is made to the effect that "patient is absolutely helpless. Attacks of delirium occurred independently of the delusions, and status epilepticus has been declared on several occasions during the past few months. Symptoms of asthenia have often been pronounced, and speech disturbance, consisting of senseless repetition of words has been almost continually in evidence. Attacks of delirium occurred; but owing to mental enfeeblement and speech disturbance, the exact mental status of the patient could not be determined."

On December 3, 1900, after a period of marked physical failure, characterized by loss in weight and rapid emaciation, slight, clonic convulsions of the left, lower facial muscles and left, upper arm group, developed. Patient appeared to be in a state of profound coma, with an increasing rise in temperature. Irregular, lateral nystagnoid movements of eyes were present, with fine, clonic convulsions of muscles of face, and coarse, clonic convulsions of left arm, consisting of rapid flexion and extension at the arm and elbow. Symptoms of asthenia rapidly increased, and patient died from "apnea," twenty-four hours after the declaration of seizure.

AUTOPSY.

The brain alone was examined. The dura mater was adherent over convexity of both hemispheres. Pia mater was adherent over both frontal and parietal lobes, and there were appearances of leptomeningitis. The brain was easily removed from its situation in the skull cavity, and excepting the conditions noted above, it did not appear to be abnormal. The weight of brain was fifty-four ounces.

Examination of brain, after hardening, showed a tumor, involving the entire left, cerebral hemisphere, extending to the right, basal ganglia, and also involving the right temporosphenoidal, and about one-half of the frontal lobe.

REMARKS.

Microscopical examination of mass proved it to be a large sarcoma.

The mental condition of the patient conformed to that of epilepsy.

The development of localized convulsions, and persistent headache, with choked disc sometime afterwards, suggested a tumor, which was believed to be cortical.

The interesting factors in the case, are the persistence of the fixed and systematized delusion of persecution, during the entire course of the disease; the speech disturbance; the attacks of delirium, which were active and severe; and the symptoms indicating "focal disease," which were evidently due to the rapid extension of the tumor.

Pathologically reviewed, it is not surprising, from the area of brain substance involved, that we should have multiform symptoms.

As in Case I, we are compelled to believe that the general symptoms, alone, were valuable, and that the rapidly changing symptoms, which might indicate a localized brain lesion, were due to the development of the growth, and the consequent involvement of different parts of the brain.

THE STUDY OF PATHOLOGY.*

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THE importance of an occasion such as this cannot be overestimated. Great men and renowned teachers this medical school has always had, and will have. Its material equipment has always been among the best. But the magnificent building, the completion of which it is our privilege to celebrate, shows a greater readiness than ever before to meet the changing need of the times. For, striking as is the architectural beauty of the building, ostentation is not its object. Great geniuses will doubtless in the future, as they have in the past, sometimes make discoveries in cellars or garrets, but the confirmation of such discoveries, the clearing up of details, and, most of all, the education of workers for the laboratory, hospital, or practice of medicine, all require abundant and well-arranged rooms and innumerable pieces of apparatus. Pleasing as it would be to dilate upon the knowledge of principles and details shown in the planning of such a building, I feel that the time at my disposal can be better spent in speaking of the importance of pathology for the medical student. This can be understood more readily, I think, if we consider some aspects of the development of medicine. It is hard to believe, but none the less true, that when this school was founded, one hundred and forty years ago, medicine was but little in advance of its condition two thousand years before. In the long interval medical knowledge had travelled in circles, never getting very far beyond the elementary pathological and clinical facts known in the age of Pericles. In the five centuries between Hippocrates and Galen there was no progress at all, and for nearly fifteen hundred years Galen and Hippocrates, with Aristotle, were deemed as infallible in medicine as the Fathers of the Church were in theology. Sydenham, inferior to the Greek and Roman masters in breadth of knowledge, was the first to apply the new principles of Baconian philosophy in medicine, and Sydenham's life was separated from that of John Morgan, the father of the medical department, by less than fifty years. Though the scholars of the Renaissance had shown that the Greek and Roman texts used through the Middle Ages were sadly corrupted from the originals, and though dissection of the human body was practised in the fourteenth century by Mondino and Guy of Chauliac, it was not until the genius of Vesalius dawned (1514-1564) that the first severe blow was given to Galen's authority. About the same time pathological anatomy began to be cultivated, but the early observations were devoted chiefly to monstrosities and other apparently miraculous formations, and had little more relation with pathology than the stones collected by a small boy have to geology. The need of more rational methods was clearly stated by Bacon ("Of the Advancement of Learning," Book IV, Chapter II), who urged the study of case histories, the cultivation of morbid anatomy, and of vivisection of animals. The revelations of Harvey were essential to the ultimate development of pathology, but the first application of physiology, as the first application of physics and chemistry to pathology, caused confusion rather than enlightenment. Medicine had gathered in its course through the dark ages so much rubbish, such as magic, astrology, polypharmacy, the doctrine of signatures, and all manner of mystic beliefs that still survive to vex the impatient, that it could follow but slowly the steep path of discovery. Pathology consisted of dogma after dogma, system after system, each one having vital defects of basis or conclusion, and no radical change was possible, until, in the eighteenth century, pathological anatomy was cultivated with all the enthusiasm of the early collectors, but with the definite aim of throwing light on medicine. Lancisi and Senac, in the first part of the century, are still quoted by modern writers, but it was Morgagni (1682-1771) who gave the first important impetus to pathology. In his epoch-making work on "The Seats and Causes of Diseases Investigated by Anatomy (1761-1767)"—how significant the title!—the result of inexhaustible energy and keen reflection during half a century, he began the systematic investigation of the differences between normal and morbid conditions, and the relation of diseased organs to clinical phenomena, including diagnosis and prognosis. The visit of John Morgan to the venerable author and the presentation to him, his relative—*"affini suo"*—as the old man playfully called the Philadelphian, form an interesting link between the origin of modern pathology and the University of Pennsylvania. Morgagni examined not merely rare and curious cases, but especially diseases of common occurrence, and in all his descriptions and conclusions he showed such accuracy and judgment that he not only made pathological anatomy the basis of medicine, but served as a guide and model to all who followed him. By an interesting coincidence, in the same year in which the first volume of Morgagni's work appeared, Leopold Auenbrugger published his book on percussion, opening the way to anatomical diagnosis, but the world was not yet ready for so great a discovery and could not use it for fifty years. Morgagni, however, great as his influence was, was not a pathologist, but a clinician with a firm anatomical basis for his reasoning. The broader field was soon occupied by John. Hunter (1728–1793), and Xavier Bichat (1771–1802). Not less indefatigable than the Italian, and with a matchless fertility of mind and precision of observation and experimentation, Hunter included comparative pathology in his search, and so influenced men's minds that ever since his time diseases have been studied as biologists study other natural phenomena. The marvellous insight of Bichat made it clear that the seats of disease were to be sought not merely in organs, but in the tissues that make up the organs, and also that the fluids of the body have an important part in pathology, at least as carriers of disease. During and soon after the brief but momentous activity of Bichat there was a period that had an effect on pathology not unlike that of the French Revolution on political and social affairs, destroying medical ignorance as the latter swept away feudal abuses. And although medicine, too, had its Bourbons and reactionaries, its course was more steadily forward than that of contemporary politics. It would take too long to describe the course of pathological anatomy after Hunter and Bichat, and the names of Baillie, Bayle, Bretonneau, Corvisart, Laennec, Louis, Bright, and Rokitansky are only the greater stars of a large and brilliant galaxy. These men not only put pathology on a firm foundation by showing the anatomical changes in the most important diseases, but they gave clinical medicine a positive basis by demonstrating the relation of the anatomical alterations to the newly discovered signs, often worked out by the same hands that revealed the anatomical changes. They showed how, by the cultivation of the hand, eye, and ear, by the microscope and test-tube, diagnosis could reach a precision impossible by the use of symptoms alone.

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* An address delivered at the dedication of the Pathological Laboratory of the University of Pennsylvania, June, 1904.

But while pathological anatomy was having this salutary effect on practical medicine, it was also opening up larger vistas in the science of pathology. The creative mind of Johannes Mueller and the unparalleled activity of Virchow caused a productiveness greater than ever before. Mueller forever destroyed the power of dogma in pathology and in its place put method.

The advances in pathological anatomy kept pushing farther backward the boundaries of the unknowable. Finer differentiation of structural change made necessary new methods in the study of causes. Pathology availed itself more and more of the use of experiment, and the methods of Hunter were carried on with marvellous success by Magendie, Bernard, Brown-Séquard, Cohnheim, and an ever-increasing host of investigators. Experiments on living animals, with clinical investigation and pathological anatomy, have given us a fund of information, often of the greatest practical value, regarding diseases of the nervous system. Similar methods have opened new fields of knowledge in the so-called constitutional diseases, showing the relations of cellular perversions and of altered internal secretions in such diseases as diabetes, cretinism and myxœdema. The most wonderful advance in many ways was in the field of etiology. Speculation by various men, from Fracastorius to J. K. Mitchell, postulated the conditions underlying infection with remarkable precision, but the adoption of biological methods, the substitution of induction for speculation, brought about the marvellous growth of bacteriology and the proof of the relation of various microscopic organisms to disease and led to a previously undreamed of perfection of surgical treatment. Although bacteriology does not owe its origin to pathology, the eager if at times unskillful cultivation of the subject by pathologists made such advances as could not easily have been equalled by the more accurate but less enthusiastic care of botany or biology. Bacteriology in time led to a renewed criticism of the turning point of medicine in the nineteenth century, the cellular pathology of Virchow; and the solution of the problems of cellular chemistry and physics now engages the activity of the ablest minds in all the biological sciences, and even draws in the most profound students of pure chemistry.

So pathology progresses now along the same lines as other branches of biology, but with the difference that clinical medicine, that is to say, sick men, still offer many problems to be solved by biological methods. Every positive advance in pathology has advanced practical medicine, and we cannot doubt that with the perfection of pathology still greater improvements will be made in the future. But we should note well that as the methods of pathology become more complicated their practical application will require greater care. From this obvious fact it is plain that the medical student must have the most thorough training in all the ancillary sciences, chemistry, physics and biology, not merely with the view of acquiring facts, but rather with that of mastering methods, By solid grounding and constant cultivation only can the student keep abreast of the current of science. Without it he will soon fall behind in practical efficiency.

There is no need for enlarging upon the brilliant prospects opening out for pathology. Permit me instead to make a plea for the further cultivation of pathological anatomy by the medical student and the physician. It is natural that the immense strides of bacteriology and the promise of serum diagnosis and cellular diagnosis should overshadow the older topic and even make it seem unnecessary. Pathological anatomy was one of the most important factors in the development of medical knowledge, but it is still essential to the formation of the knowledge of the individual student. It was the basis of the diagnostic certainty of a Pepper, and of the sure touch of an Agnew. It is the bridge spanning the gap between the fundamental sciences and clinical medicine; it gives clearness and accuracy to conceptions of disease that without its aid are as shadowy and erroneous now, in minds otherwise enlightened, as they ever were; it gives definite alterations, the search for which stimulates care and precision as much as do the methods of chemistry, and the possibility it offers of ultimately confirming diagnosis and of filling out unsettled problems gives an intellectual satisfaction and a fascination to the study and practice of medicine that without it would be a painful and often a menial drudgery.

On the other hand, some of the errors and excesses of pathological anatomists have been outgrown with the advance of experimental pathology and etiology, and of a more scientific therapeutics. If pathological anatomy made too much of the numerical method, and led to a careless use of statistics, it also at all times encouraged objectivity and soberness of reasoning; if it neglected functional diseases, it also led in time to their more careful study by the persistence and acuteness with which it tried to demonstrate their non-existence; if it was responsible for such erroneous conceptions as that which made pneumonia a "lung fever," typhoid an "enteric fever," these conceptions were at least better than the old humoral ideas of general diseases with local expressions, while the anatomical view of local diseases with general symptoms due to intoxication or infection brought about our present more accurate knowledge as soon as proper methods were available. The charge sometimes made that pathological anatomy leads directly to therapeutic nihilism is hardly accurate. Therapeutic skepticism and criticism it certainly encouraged, for it forced a critical examination of alleged results, but many of the most important adherents of the school have been among the warmest advocates of therapeutics as the chief end of medicine, the real object of pathology.

There are certain important aspects of the study and teaching of pathology that may be considered with advantage at such a time and in such a place. "Practical teaching" and "laboratory methods" are the watchwords of the day, but it is sometimes possible to see these methods carried on to the neglect of real learning. Without actual handling, seeing, analyzing, drawing, and describing, such a topic as pathology cannot be mastered, but to do it properly requires sound preparation, cultivated habits of thought, patience, the necessary raw material, reagents and apparatus, and sufficient time. And yet time, in our crowded medical courses, is very often lacking, and the student is expected to get along very often without most of the other things. So short is the time that only the essentials of principles and methods can be covered in the usual course, but the undergraduate should have every opportunity and encouragement for learning more facts and for original investigation. Another need in the teaching of pathology is a sufficient number of able teachers. Few can learn to draw, paint, or play a musical instrument without a teacher, and usually a certain degree of excellence is required of such teachers, and yet medical students are often expected to master various laboratory branches with few teachers, and these very often poorly informed and untrained in imparting knowledge. In any natural science, if not in all sciences, it is essential that the teacher should be an investigator. In pathology, the outlook of which changes so rapidly, nothing but participation in the development of knowledge will prevent the rusting of the faculties. This does not mean that every teacher and assistant in a laoratory must be a genius; but each one must have the "things that improve genius—proper exertion, frequent exertion, and successful exertion." Technical detail and the making of autopsies can be left to dexterous prosectors who are working to win their spurs; the examination of students' work can be done by any well-informed, critical, and conscientious young worker, but the direction of the whole should be in the hands of the ablest man available, well trained, original in mind, receptive, and sympathetic for every other branch of science.

The elevation of the laboratory has led to a top-heavy way of teaching in some schools, by encouraging students to do advanced original work before their foundation is sure. The advantages of gradual advance from known to unknown are here abandoned, as we can sometimes see when students write articles on the protozoon origin of cancer before they have seen a dozen different examples of cancer or examined a known protozoon.

The insufficient number of teachers in nearly all laboratories may have had something to do with an interesting development of the present time—the demand for research in institutions free from teaching duties—though this has come partly, no doubt, from a laudable desire to more rapidly advance science for itself. The view that research can only be done by hermit investigators is a pernicious one in many ways. The original investigator, of course, needs time and often seclusion to perfect his work. and there have been and always will be some who can only work in retirement. For this end academies and institutes have in the past offered facilities, and may with advantage be assisted in still further doing so. On the other hand, endowments to existing teaching laboratories could often more economically attain all desirable ends. The widespread idea that research is incompatible with teaching, even that entailing considerable expenditure of time, is refuted by the examples of such men as Helmholtz, Ludwig, His, and a host of others within the most productive period of science. Not only is the combination possible, but it might be argued with considerable success that the ultimate gain to knowledge would be greater by keeping the example and methods of great investigators closely before younger minds, for methods and examples are things that cannot be transmitted by lectures or books.

The hermit idea has even been applied to plans for hospitals. This also has sources of error. One, the inference that good work can be done in a hospital in which no research is carried out. The truth is that hospital physicians, and the argument is true of those in private practice, cannot remain efficient if they cease investigating. The other, hardly necessary to mention, because it refutes itself, depends on the fact that a hospital with research as its chief object, and relief of suffering secondary, is inconceivable. If hospitals could only be stimulated to better work by the endowment of institutes for clinical experiment, these should by all means be tried, but the development of pathology in the nineteenth century, shows such a trial is unnecessary. There is still great need, however, of giving hospitals, including asylums of various kinds, means of research—laboratories, apparatus, and trained workers—to have a sufficiently large corps of clinicians to carry on modern methods of investigating and treating the sick, and to choose for such positions only those who are capable of advancing the subject.

A popular method that has been adopted for the increase of discovery in pathology, as also other sciences, is the endowment of fellowships. Often there are such restrictions of time and work, and imperfect facilities for either work or instruction, that the results are disappointing. Often the ultimate ambitions of such appointees are so far removed from their positions that their own time as well as that of those who should guide them is thrown away. Science gains nothing. Thomas Fuller's remark is applicable here, that "many can play Apollo's lyre who are not able to guide his chariot," and the advance of knowledge would often gain more by giving an overworked teacher a servant at ten dollars a week or an assistant willing to rise by his labors at a similar salary than by giving him one or a half-dozen fellows at one thousand dollars a year each.

A serious obstacle to the growth of pathology, and particularly of pathological anatomy, is the neglect of or objection to autopsies, a difficulty that affects physicians in all kinds of practice, hospital or private, by depriving them of the most powerful incentive to careful work. This is the one thing in which the scientific part of medical education in America is still inferior to that of Europe, and one that prevents the keenest critical spirit from developing in the non-operative departments of practical medicine.

The difficulty depends partly on a sentiment that is not new in the history of civilization and is not associated, as is sometimes thought, with any one creed, race, or color, partly on a neglect or indifference of physicians. The Roman, who thought it not only diverting but instructive to see the butchery of the arena, would never think of permitting the dissection of a cadaver in order to learn anything useful, and Charles V, who thought little of having men dissected alive, tried to prevent them from dissection when dead. In some countries that we look upon as much below our own in civilization, benevolent people leave money to provide for autopsies on those whose families are unable to pay to have such operations made, while in America self-styled philanthropists busy themselves by preventing the dissections of the bodies of those who never benefited humanity alive, but might do so after death. In the lavish waste of life and health that occurred in army camps in the Spanish-American war it was no less instructive than depressing to see the neglect of pathological anatomy. For weeks the question as to whether there was typhoid fever in the camps was met by contradictory assertions. It took months to get microscopes, cultures, and capable observers to the hospitals. Yet a half-dozen autopsies could have settled the problem very quickly. While large sums were spent for instruments to treat wounds that never came, some of the largest hospitals did not possess a single autopsy instrument. It was said by those in high places that people would not like to have the dead soldiers examined; but can we suppose that those who were willing to let their sons risk the mutilation of the machete would object to a decent autopsy if they realized its value, or that men who thought it sweet and glorious to die for their country would not be willing to be examined postmortem for the benefit of others?

I think we may hope that as pathology gets everywhere out of cellars and back rooms, and has local habitations such as we see here, its cultivation will assume a broader and more independent character, and that the advance of the science of disease will have its logical effect on practical as well as in the broad field of preventive medicine.

REMARKS ON BILIARY AND HEPATIC SURGERY.*

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I APPRECIATE the kind invitation to address you, and in what I shall say about the surgery of the liver I shall try and touch only the salient points in the hope of kindling enthusiasm for more study of the symptoms and treatment of a large class of serious ills.

Cholecystectomy—a name to signify an opening into the gall-bladder, through which the bile may be steadily drained away, affords a sure channel for relief from cholemia resulting from obstructions in the common ducts. It also affords a sure relief for overdistended hepatic ducts, and may likewise provide a way for draining these when they are infested by a general cholangitis. Chronic catarrhal and purulent cholecystitis and bile stagnation also find relief by this aperature, which is the safest and most efficient of all the operations of biliary surgery. It is performed in this way:

An incision is made through the abdominal wall embracing the right rectus muscle from the costal margin downward to a point level with the navel. In the depths of this wound the gall-bladder is found, sometimes no larger than an acorn, and again as large as a goose egg. I have seen it once six inches long and less than an inch in diameter.

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* Read before the BLISSFIELD (Massachusetts) MEDICAL CLUB.

It is dragged into the wound and is fastened by a running stitch around its base to the cut in the peritoneum and then it is opened by an incision just big enough to admit a drainage tube, through which the bile steadily flows away. Sometimes I do not use any drainage tube but make the opening large enough to do the work of drainage. After the potency of the common duct is restored, and after pus and mucus have drained away, the fistula will close spontaneously. Cholecystostomy may in some cases be connected with the duodenum so that drainage from bile tracts will pass into the intestine.

Cholecystectomy is an operation for removal of the gall-bladder. It is to be done whenever there is considerable disease of the mucous wall of the gall-bladder. In purulent affections of the gall-bladder, and when the organ is much enlarged, it should be removed. The procedure is not difficult or bloody as a rule if some care is taken to secure the base of the organ as close to the cystic duct as possible by a strong ligature. Then the entire thickness of the gall-bladder is cut through and removed. There are some surgeons who peel out the mucous wall of the gall-bladder and cystic duct as a specific feature of cholecystectomy. There is sometimes quite active hemorrhage from the hepatic substance in the course of a cholecystectomy, which in my experience is best controlled by pressure with gauze pads. I have not had much success with sutures or ligatures in controlling bleeding from the liver tissue.

The essential feature of a cholecystectomy ought here to be made clear in purpose and execution. It is to make sure that the operator secures an attachment for the gall-bladder and great ducts that will make the channel from the former through to the duodenum as straight and free from angulation as possible. Gall-stones—biliary calculi—have been until quite recently the purpose of biliary surgery. But now we operate to prevent the formation of these bodies by fastening the gall-bladder in a position that secures perfect drainage of the bile passages through the natural channels.

Bile stagnation is the condition that should be met by the operation just described. The symptoms of it should always be carefully searched for. They are more or less persistent dull aching pain in the right side under the shoulder blade, with marked tenderness over the region of the gall-bladder. The constitutional symptoms—fever, disturbance of pulse and respiration—are likely to appear at times in these cases, and there is quite sure to be some disturbance of stomach and digestion. Jaundice may or may not be a feature of bile stagnation. When it is a symptom, and the stools are clay-colored, surgery should be promptly resorted to if the case is one of marked chronicity.

The cases of simple catarrhal jaundice, which commonly yield to corrected diet and improved hygiene, do not need consideration by the surgeon. Chronicity, progressive debasement from bad to worse, drives the patient with stagnant bile from the family doctor to the surgeon.

Choledochotomy—an operation for removal of gall-stones impacted in the common bile duct—is not a very serious surgical procedure if the work is limited to removal of the stone and providing drainage for the wound in the duct. Attempts to suture the common duct is in most instances meddlesome surgery. To drain the wound a small tube, loosely packed about with gauze connecting it with the abdominal wound, is all that is needed. Good modern practice accepts all cases of disease of the bile tracts so early that the awful cases of huge impacted calculi that require incision of the duodenum for their removal are rarely encountered.

The best surgery inflicts very slight damage on the biliary channels and receptacle unless it be to completely remove the latter, and there are consequently very few cases that terminate unsatisfactorily.

Hepatotomy is an operation we occasionally have to perform for the cure of some of our citizens who have suffered from dysentery in the tropics and have an hepatic abscess. I saw several such cases in Bombay, Colombo, Singapore and Manila. It is not always easy to locate the abscess and therefore know just where to execute hepatotomy. The best practice I have observed recognizes fever, tenderness over the liver, pain following or dysentery, and locates the nidus of broken-down tissue by search with exploring trocar, and then, with the trocar as guide, a more or less free incision is made into the abscess. Subsequent drainage with gauze is practiced in after treatment.

ORIGINAL ABSTRACTS.

MEDICINE.

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CIRCUMSCRIBED AND DIFFUSE PULSATIONS OF THE WALL OF THE THORAX.

Joseph Sailer (*American Journal of the Medical Sciences,* August, 1904) has made a thorough study of reported cases of pulsation of the wall of the thorax from other cases than aneurysm and other vascular or cardiac disease. Two interesting cases of vascular disease are briefly cited, however, one being a case with widespread vascular pulsation and slight but distinct systolic pulsation of the whole right side of the thorax. Similar cases have been reported by Edwards and La Fleur. Sailer suggests that the pulsation is similar to that observed in the abdomen, being due to a voluminous pulse in persons with long narrow thoraces and ptoses of the organs. A good example of retraction of the lower interspaces in the left posterior axillary line (Broadbent's sign) in obliterative pericarditis is also cited.

Most of the paper is devoted to cases in which effusion of air or liquid or both has taken place into the pleural cavity. Cases of this kind were probably seen by many after the report of one by DeBaillou, in 1640, but the first one accurately described is that of Bérard, published in 1810. Sailer finds a total of ninety-seven recorded cases, several of which are incompletely reported. The following groups can be recognized: (1) pulsating empyema and pulsating pyopneumothorax of necessity; (2) pulsating empyema and pulsating pyopneumothorax; (3) pulsating encapsulated empyema; (4) pulsating serous or hemorrhagic effusion; (5) pulsating extrapleural abscess. Although such conditions are doubtless often overlooked, they are rare on the whole. In Paris, where Comby called attention to it in 1883, only four other cases were observed in the following thirteen years, and many experienced clinicians have never seen a case.

The pulsation may be diffuse or circumscribed and with tumor; both forms may be present in the same case. Cases with tumor are often mistaken for aneurysm. The pulsation is systeloic. There is some question as to whether it is expansile, but ordinarily it is so described. The pulsation does not always develop *pari passu* with the tumor. Sailer suggests the following classification: (1) Diffuse pulsations of the thoracic wall. This may be subdivided into cases with a perceptible and palpable or merely palpable pulsation in one part of the thoracic wall and those with a more powerful pulsation affecting the whole wall, visible and palpable and even perceptible to the patient. In one case the pulsation shook the bed, though the cardiac action was not greatly exaggerated. (2) Circumscribed pulsations with tumor formation. This form has four subdivisions: empyema or pyopneumothorax, empyema with perforation of the pleura and subcutaneous abscess, local bulging from encapsulation of purulent or serous fluid in the pleural space, abscess outside of the pleural cavity, usually arising from the periosteum of the ribs or pleura, and ordinarily tuberculous. (3) A true expansile pulsation of the whole thorax, the only certain case of which the author reports. In this there was ruptured aneurysm of the ascending and transverse parts of the arch of the aorta, and hemothorax of the left side.

The previously reported cases have been critically restudied by Sailer, but the details are too extensive to reproduce here. The same may be said of the theories propounded, which are critically examined. The author's summary in full is as follows: Pulsation of the wall of the thorax may be due to disease of the heart or blood-vessels; may be idiopathic, that is, not the result of any definite cause; may be due to pleural or pericardial adhesions; to accumulation of fluid in the pleural cavity, or to abscess of the wall of the thorax. When the pulsation occurs as a result of accumulation of fluid in the pleura, the left side is affected in the majority of cases. The patients are usually males, and less than forty years of age. The mechanism depends in all probability upon the existence of a positive pressure in the pleural cavity with tension of the mediastinum. G. D.

SURGERY.

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TREATMENT OF PENETRATING WOUNDS OF THE HEART.

John H. Gibbon, M. D., of New York, says (*American Journal of the Medical Sciences*, September, 1904) the operation was first suggested by Doctor John B. Roberts in 1881, and the first operation was reported in 1896. Doctor Stewart's table presents sixty cases but there are probably some unsuccessful cases not reported. The fact that twenty-three have recovered should encourage us to make the attempt at repair. Patients with signs of heart compression or hemorrhage are the most unfavorable, stab wounds are more favorable than gunshot wounds, as the latter usually means two wounds, provided the bullet does not lodge in the heart. The Italian surgeons have made the largest contribution to the literature of the subject and papers have been presented by Germans, English and Americans.

There is no fixed rule for the technique, much depending on the condition of the patient and location of the wound. In desperate cases, too much time should not be lost in preparing the field of operation. An anesthetic should be employed when possible, unless the patient is already unconscious. Although manipulation and suture of the heart is not painful, the patient may struggle and dislodge a clot. The incision will depend on the location and nature of the injury; when there is time, an osteoplastic flap should be formed with its base towards the sternum. The pericardium is then opened, the wound in the heart found and plugged with the finger, which, if possible, is held in place until the sutures are passed. When this is not possible, the heart should be lifted by traction sutures. Suture during diastole, while strongly advised, is of little importance. The same may be said of suture material, though the writer prefers cromocized gut and a full curved intestinal needle. When the anterior wound is closed, look for another posterior. The pericardium is then washed of clots and closed with or without drainage, according to the possibility of infection.

A case of suture of the heart, with recovery, is reported by Doctor F. T. Stewart, in the same journal. This patient was operated on February 29, 1904. The injury was inflicted with a long rusty penknife, making a wound just above the third rib, one inch to the left of the margin of the sternum. The operation was begun under ether anesthesia, about forty-five minutes after the injury was received and lasted forty-five minutes. A triangular flap of skin four by four inches was turned away from the sternum, the third and fourth ribs were cut and broken at the sternal end, exposing a cut in the pericardium three-eighths of an inch long. This was enlarged and the heart wound was found in the left ventricle, measuring three-fourths of an inch. The wound was closed with six continuous silk sutures. The blood was removed from the pericardial and pleural cavities, the latter being washed with salt solution; the pericardium was closed with a silk suture and drained with gauze. Circulation was maintained by use of twenty-four ounces of salt solution containing adrenalin. He was dismissed from the hospital on the fifty-sixth day, to return for dressings. This makes the fourth successful case of heart suture in this country.

An interesting account is given concerning the opinions held by prominent surgeons from Hippocrates to the present, about heart suture. "Billroth declared that no surgeon who wished to preserve the respect of his colleagues would ever attempt to suture a wound of the heart. Rudinger considered the proposition below the dignity of mention." A complete table of cases is given, beginning with 1896 and ending with his own. There are sixty cases with thirty-eight and one-half per cent recoveries.

C. G. D.

GYNECOLOGY.

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ON THE CHOICE OF OPERATION IN MYOMA.

Doctor John W. Taylor, of Birmingham, England, says that (*Journal of Obstetrics and Gynecology of the British Empire*, August, 1904) supravaginal amputation of the uterus is the most generally useful of all operations for large myomata. It is the least difficult, the least hemorrhagic, and the most successful of all the major varieties of abdominal hysterectomy. It leaves the vagina uninjured, and is less followed by painful sequelæ than total extirpation. He discusses the technique for this operation.

Panhysterectomy has its place in the treatment of myomata. It is chiefly needed for big sloughing myomata in which the entire uterus is affected by the septic process and for large malignant tumors of the uterus (sarcomata, malignant degenerators of myomata, and chorion-epithelioma). In these cases he advises the combined operation, beginning below with the patient in the lithotomy position. The cervix is liberated from its attachment to bladder and rectum and the os closed tightly by catgut sutures. The abdomen is then opened and the uterus removed.

For smaller myomata he advises (1) removal of the appendages or (2) vaginal hysterectomy. Large myomata can be removed by vagina by "morcellement."

He does not approve of the operation of enucleation unless the uterus is the seat of a single small growth. C. L. P.

OPERATION OF CHOICE IN CANCER OF THE UTERUS.

Turet and Besson discuss (*Revue de Gynécologie et de Chirurgie Abdominale,* Mai-Juin, 1904) the operation of choice in the treatment of cancer of the uterus. The proportion of inoperable cases was found to be enormous—one hundred four out of one hundred seventy-three cases. The other cases were operated, forty-six by vaginal hysterectomy and twenty-three by abdominal hysterectomy. The mortality in the vaginal hysterectomies was fifteen per cent, and of the abdominal hysterectomies was 43.4 per cent. The following conclusions are drawn:

The surgical intervention in cancer of the uterus, at the present time, gives, for total hysterectomy by the abdomen, a mortality two or three times as great as vaginal hysterectomy.

The proportion of cases remaining benefited after two years is greater after vaginal hysterectomy, which remains the operation of choice in limited carcinoma.

In advanced cases, with weak and general condition, all intervention should be rejected, as only palliative means are indicated.

C. L. P.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., Detroit, Michigan.

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ATTENDING THE LORENZ ORTHOPEDIC CLINIC IN VIENNA.

THE USE OF ANTISTREPTOCOCCIC SERUM IN THE TREATMENT OF SCARLET FEVER AND DIPHTHERIA.

P. F. Mackie (*London Lancet,* February 20, 1904) in a paper compiled from clinical, bacteriological and postmortem notes and temperature charts, concludes as follows:

(1) Antistreptococcic serum is of distinct value in a certain number of cases of scarlet fever, particularly in those where the throat lesion is severe and toxemia is going on.

(2) Bacteriological examination affords no sure guide as to the cases in which serum will be beneficial, therefore it is advisable to give the serum early and to make the bacteriological examination afterwards.

(3) The serum ought to be given early in the disease just as in diphtheria. The longer the disease has lasted before the serum is used,

the less likelihood is there that it will be beneficial; the serum is too often brought in at the last with the strychnine and oxygen.

(4) If the first dose or two does not lower the temperature its continuation is probably of no value.

(5) The serum is liable to produce urticario-erythematous rashes.

(6) Even in those cases in which it does no good there is no evidence to show that it does harm.

(7) Those cases of diphtheria which present septic symptoms and those wherein tracheotomy may be required, may, with advantage, be treated with antistreptococcic serum as well as with diphtheria antitoxin.

LARYNGOLOGY.

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TONSILLITIS A CAUSE OF ACUTE NEPHRITIS.

JOHN L. MORSE (*Archives of Pediatrics*, May, 1904) reports four cases of acute nephritis following tonsillar inflammation. Two were in adults. In the first case the urine was known to have been normal a short time before the tonsillar attack. In the second case antitoxin was administered as diphtheria was suspected. It is not believed by the author that the antitoxin caused the nephritis. Two of the cases were in children. Scarlet fever was excluded in both cases. The author believes that the heart and urine should be examined in all cases of tonsillitis.

NEUROSES OF NASAL ORIGIN.

G. HUDSON-MAKUEN (*American Medicine*, June 4, 1904) says that there are two ways in which the nervous system may be affected by intranasal disease: (1) by interference with normal respiration; and (2) by peripheral nerve irritation. He calls attention to the importance of free nasal breathing over normal mucous membrane as a means of keeping the entire respiratory tract in good condition, and indirectly of giving tone to the general nervous system by the proper aeration of the blood. He calls attention to the importance of careful examination of the nose in all nervous disorders. His conclusions are as follows:

(1) It is reasonable to suppose, though not absolutely proved, that some of the more serious mental and cerebral diseases may be of nasal origin.

(2) Many of the so-called reflex nasal neuroses may best be explained on the theory of faulty respiration and impaired cerebral circulation, due to direct intranasal pressure and the absorption of toxic catarrhal products through the blood and lymph circulation.

(3) A careful examination of the nose is imperative in all doubtful cases of disease of the nervous system.

REPORT OF A CASE OF VINCENT'S ANGINA AND STOMATITIS.

G. C. CRANDALL (*Journal of the American Medical Association*, July 23, 1904) reports a case of this comparatively rare or unrecognized affection. The patient was a male, aged twenty-three, medical student. He first complained of pain in the region of the left tonsil. The throat was congested on that side. The next day the symptoms were gone, and the second day a small diphtheric spot was observed on the anterior border of the left tonsil. The spot was about one-fourth inch in diameter, and did not enlarge much during the six days it was present. It was covered by a greyish-white, friable, pseudomembrane, which could be easily removed, leaving a slightly depressed bleeding surface over which the membrane would again form in a few hours. The fourth day of the disease the patient had his teeth cleaned, and the following day the disease appeared along the margin of the gums and between the teeth. Wherever the infection extended, it had the appearance of the primary spot on the tonsil. The constitutional symptoms were slight, and the debilitation was due to the inability to take the usual amount of food.

The spot on the tonsil was touched with pure carbolic acid, followed by a gargle which consisted of a one to one-thousand bichlorid in two per cent carbolic solution. This relieved the throat at once, but had little effect on the gums, which later were relieved by chlorate of potash solution. Bacteriological examination showed the bacillus of Vincent.

A NEW PATHOGENIC THROAT ORGANISM.

B. A. STONE (*Medical Record*, August 12, 1904) reports eighty-one cases of an acute inflammatory condition of the throat studied bacteriologically, which occurred in Vermont during the winter of 1903-1904. It resembles diphtheria, syphilis and the inflammation accompanying influenza. The toxic symptoms subside within two days, leaving an irritable condition of the mucous membrane of the throat, which persists for some time. The attacks may occur at any age. The causative organism occurs in the secretions and exudations of the inflamed mucous membrane.

It is a diplococcus with its adjacent sides slightly flattened. When stained with Loeffler's stain, one or both of nearly every pair has a distinct metachromatic granule which stains very intensely. When stained with fuchsin the granule does not show. One of the pair is often smaller than the other. They vary from one-half to one micron in diameter.

The writer believes that this organism stands as an etiological factor in the throat cases described in the article, even though efforts to reproduce its peculiar lesions on mucous membranes of laboratory animals have been so far unsuccessful—

(1) Because it has been found constantly present in these cases in

almost pure cultures and isolated, while no other organisms are constantly found.

(2) Because it is not generally found in healthy throats.

(3) Because it is toxic for laboratory animals producing on serous membranes an exudate analogous to that produced in the throat, from which exudate it has been recovered in pure culture.

(4) Because it produces a soluble toxin sufficiently virulent to kill animals.

(5) Because its blood serum growth has a peculiar viscid character, suggesting the extreme viscidity of its exudate in the throat.

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY, M. D., Ann Arbor, Michigan.
LECTURER ON DERMATOLOGY AND SYPHILOLOGY IN THE UNIVERSITY OF MICHIGAN.

THE *X*-RAY TREATMENT OF MYCOSIS FUNGOIDES.

Doctor W. A. Pusey, in a review of "Radiotherapeutics and Phototherapeutics," has collected a number of cases of mycosis fungoides treated successfully by the *x*-ray during the last year. Cases in various stages of development—and some that had previously been reported, still remaining well, going back to first report by Schültz, February 1902—have been reported by Jamieson, Stainer, Riehl, Marsh, Hyde, Montgomery, Ormsby, Carrier, Brocq, Bisserie, Belot, Lustgarten and Elliot.

The periods of treatment ranged from a few months to two years. Some of these cases that recovered under the *x*-ray had been unsuccessfully treated by other methods for one to two years. It is as interesting as it is remarkable, that in the pruritus and, the premycotic stage, the nodular tumors, and the granulomatous ulcers, all yielded to the curative influence of the rays in an almost miraculous way.

The gratifying unanimity in these reports "leave no room for doubt that we have at last found a method of treating these hitherto absolutely hopeless cases, that is of positive and great benefit."

TINEA TONSURANS AND FAVUS.

Sabourad reports his experience in the treatment with *x*-rays of a hundred cases of tinea tonsurans and favus. The results are in his opinion very satisfactory. He is very particular in all his methods and details of technique, giving exposures of as near definite strength as possible and carrying them to the point of producing alopecia, with a temporary erythema.

But in order to prevent reinfection while treatment is being carried on with the ray he employs a parasiticide in the form of an alcoholic tincture of iodin. He expresses the rational and obvious opinion that the reasons for poor results so often attending these conditions are that epilation has not been complete in the affected hair follicles and roots, or that the unaffected areas have been overlooked, or that the precautions to prevent reinfection have not been sufficiently active and vigorous.

PSYCHIATRY.

BY WILLIAM M. EDWARDS, M. D., KALAMAZOO, MICHIGAN.
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BEGINNING GENERAL PARESIS; ITS RECOGNITION AND MANAGEMENT.

DOCTOR CHARLES LEWIS ALLEN, pathologist of the New Jersey State Hospital at Trenton, publishes in the *Medical News,* August 20, 1904, a valuable article under the above caption. While probably not a new disease, the recognition of general paresis dates back only about eighty years, and a half century ago it was a medical curiosity. Doctor Allen quotes statistics showing that the admission of paretics to asylums vary from six to thirty per cent of the total admissions. In this country the proportion is from six to ten per cent. The disease seems to be growing in frequency, affects city rather than country residents, the former being more in the way of the infection causing it, and occurs about once in women to seven to ten times in men. Allen quotes Krafft-Ebing's aphorism that general paresis is a product of "Syphilization and Civilization," and says syphilis is a chief factor in its causation, being estimated as present in from twenty to ninety per cent. Abuse of alcohol, heredity for insanity, the modern struggle with its mental and physical stress and intemperance in eating and drinking are the chief adjuvants. The two prominent features of the disease are progressive mental failure and paresis of muscles. No grade of society is immune, but the disease usually manifests itself in those in whom syphilis and alcoholism is apt to be present.

According to Allen the onset of the disease is slow, the patient undergoing a mental change which may be marked by exaltation, abandonment of care, excitability with restlessness and irritability, or vague depression, fears and hypochondriasis. Changed conduct is one of the earliest symptoms. The previously sober, moral, prudent man plunges into gross excesses, squanders money and may resort to trifling theft or fraud without reason.

Doctor Allen mentions three types of the disease, the demented, the melancholy and the so-called classical, and says the tendency of all is to dementia and death from marasmus unless cut off by intercurrent disease or convulsive seizure. The earliest symptoms are a combination of mental and physical changes. Among the latter are incordination specially shown in disturbances of speech and handwriting. Syllables may be left out, slurred or transferred. As the patient tries to speak there is tremor of the lips. Writing is irregular, uneven and words and syllables are left out from lack of attention or indifference.

Doctor Allen says one of the earlier symptoms is the failure of the pupil to contract for light while contraction for accommodation remains. He says that a mental disturbance in a man between the ages of thirty and fifty without previous mental unbalance should at once suggest the possibility of paresis. If there is clear history of previous syphilis the possibility becomes a probability.

He says the one disease from which differentiation is to be made is neurasthenia of cerebral type. The mental reduction in the latter is simple weariness while in paresis it is real failure. The neurasthenic does not present loss of knee-jerk and his pupils are not immobile. The neurasthenic feels worse in the morning and improves toward night while in the paretic the reverse is the case. Two other conditions that may be confounded with paresis are cerebral syphilis and alcoholic insanity, the latter amounting at times to pseudoparesis. Doctor Allen says the symptoms most likely to be found in the earliest stages are changes in knee-jerk, failure of the pupil to react to light, and optic atrophy. A symptom not of the earliest stage but of diagnostic certainty is the occurrence of paretic seizure. He recapitulates as follows: "Severe neurasthenic or hypochondriacal symptoms or any decided mental change coming on without known cause in a man from thirty to fifty years old, should be regarded with suspicion. If there was previous syphilis the probability of general paresis is great. If in addition there is immobility of the pupils, with loss of knee-jerk, the diagnosis is practically certain, while if there are added the characteristic speech disturbances, and a convulsive seizure, there is no longer any doubt."

Medical treatment has little or no effect. The chief duty of the physician is to guard the patient from excesses and prevent him from squandering his property and leaving his family destitute. A case of the demented type can be cared for at home if the family has means to provide the necessary attendance. Early admission to a good institution under constant, intelligent care is the safest and best measure in the great majority of cases. The average duration of the disease is from two and one-half to three years.

THERAPEUTICS.

By DELOS LEONARD PARKER, Ph. B., M. D., Detroit, Michigan.

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WHOOPING-COUGH; ITS CAUSE, COMPLICATIONS AND TREATMENT.

Louis Spitz, M. D., in an article with the above heading in the May number of *The Therapeutic Review*, presents a summary of the various methods recommended for the relief of pertussis, and several quotations on the cause of this disease.

Root, of Chicago, is made sponsor for the statement that pertussis is looked upon too lightly both by the laity and medical profession. According to the "Bulletin of the Health Department of Chicago," in the first half of 1903 more than twice as many deaths resulted from whooping-cough as from scarlet fever. In the eight largest cities of the United States the deaths from whooping-cough were 1,239 as compared with 1,403 from scarlatina.

Hull, of Atlanta, studied fifty-five fatal cases of whooping-cough and found twenty-five per cent were complicated with either bronchitis, pneumonia, edema of the lungs or phthisis. Another twenty-five per cent with gastroenteritis or enterocolitis. Other complications were measles, typhomalaria, peritonitis and hemorrhage. Most of these cases occurred in infants under one year, and in summer months. The average duration was a little over three weeks.

Among the more common complications of pertussis mention is made of various lesions of the nervous system. Jurasz reported the case of a boy two years old who developed paralysis of the posterior crico-arytenoid muscles.

Eclamptic attacks are not uncommon and present a mortality of ninety per cent.

Andrew Buchanan says most frequent causes of death in whooping-cough are—(1) asphyxia in consequence of long duration of expiratory cramp; (2) long continued hyperpyrexia without local changes; (3) exhaustion; (4) rupture of blood-vessels in lungs or brain; (5) intercurrent complications.

Doctor Spitz says nearly all observers agree that the disease is produced by a specific though undetermined microorganism. The point of attack, however, is not settled. Some think it the nasal mucous membrane, others the larynx, and still others the trachea. Generally and especially in younger cases one is apt to consider the disease a general infection with a local manifestation.

In referring to treatment Doctor Spitz recalls Hare's statement that remedies for pertussis are almost as numerous as members of the medical profession and that every one of them is worthless so far as cure is concerned.

Antipyrin in one- to three-grain doses every five hours generally lessens the number of paroxysms, but not the severity of each attack. Quinin in solution, one grain to one ounce of water, applied to the pharynx as a spray allays irritation and acts as a prophylactic. Other remedies of value are tincture of belladonna, nitrite of amyl, benzine by inhalation, hot poultices on the posterior part of the thorax, hydrogen peroxide gargle, creosote and out of door life except on windy days.

Monti, of Norway, claims the disease can be cut short by placing the patient in a room which has been previously disinfected with sulphurous acid.

Staedtler, of Bern, recommends inhalation therapy of an antiseptic nature in conjunction with the internal use of drugs.

Hlinske, of Bohemia, advises the use of formalin in whooping-cough as well as in various catarrhs and influenza. The patient is to breathe for a half hour small quantities of this substance and then be removed to a room previously disinfected with the same agent.

Niemyer states that if spasm of the glottis could be overcome the backbone of the disease would be broken. He does not say, however, how this can be accomplished.

EDITORIAL COMMENT.

THE RECKLESS APPLICATION OF ROENTGEN RAYS.

ACCORDING to medical literature the first burn attributable to *x*-ray therapeusis occurred in 1896, the lesion being situated on the left hand. This accident was published about seven months subsequent to Roentgen's discovery, but in the meantime Daniel announced a case of alopecia which he attributed to the new therapeutic agent. Less than a year later Gilchrist contributed a tabulated résumé of cases which showed in connection with other important data that the trunk was the region most frequently and seriously attacked. The average occurrence of burns during a period of five years has been estimated one to one thousand, but there is little probability that the statistics more than approximate completeness. In a collection of about two hundred cases, published by Codman in 1902, one-half were serious in nature and one-third occurred in *x*-ray operators. A late rendering of casualties discloses the proportion of one to ten thousand.

* * *

Among the interesting patients exhibited in the clinic at the recent Niagara Falls meeting of the American Dermatological Association was a dreadful case of *x*-ray burn of the hand and wrist. The integument was entirely destroyed over a section of the circumference of the wrist nearly three inches in length, and considerable subtegumentary tissue was lost, leaving a raw and bleeding surface in which could be seen muscles, tendons, and blood-vessels! One finger had already been amputated, and the thumb and remaining fingers, together with the remnants of the hand, were edematous, cold, and sodden, the appearance indicating a probability that amputation of the forearm would be necessary. The statement given in the history, that the *x*-ray had been used in a manner little short of recklessness, tended to make the exhibition of the case the more impressive. It was remarked that the condition for which the ray was employed was an innocent lesion on the back of the hand, that the tube was placed very close to the hand, the exposure continued about fifteen minutes or more, and repeated daily for a period of weeks!

* * *

A similar case was lately reported from a neighboring county in Michigan, where *both hands* were injured to an extent described as even worse than that of the unfortunate victim whose case is cited above, which resulted from treatment by ignorant and irresponsible operators. No object lesson could be more effective in showing the need for intelligent caution in the use of an agency which is so powerful for good when rightly directed, but so dangerous in the hands of the uninstructed or careless. Information regarding the occurrence of *x*-ray burns, report of which is not submitted for publication by operators, is sometimes brought to the attention of brother practitioners through the medium of lay gossip, and is liable to create an impression of inefficiency that a frank statement of the case would preclude.

* * *

Various theories exist regarding the causation of *x*-ray burns. The presence of foreign bodies in the skin was thought to be responsible for the accidents, but efforts to prove this hypothesis were futile, as well as that of ozone formation in the skin. Idiosyncrasy seems to figure as a factor. Blondes are considered more susceptible than are brunettes, while persons in impaired health are more readily affected than are those in robust condition. Many other factors are said to enter into the production of burns, the character and vacuum of the tube being important. Allen mentions the nerve supply of the parts, and believes the burns are due to the effect of the ray on the vasoconstrictor nerves, "overstimulation of these nerves bringing about a gradual paralysis of the nerve filaments, thereby destroying the elasticity of the vessels, producing a dilatation and hyperemia. The degree of burn depends entirely on the degree of paralysis of these nerves."

* * *

Therapeutics has not yet succeeded in affording an invariable agency whereby *x*-ray burns may be prevented. Tanning of the skin is a mishap that sometimes occurs, and seems to confer immunity from further attack. The application of a three per cent solution of methylene blue is sometimes applied as a prophylactic measure, and its reputed efficiency in overcoming liability of the skin to burn, as well as in promoting healing after the accident has occurred, renders this agent worthy of trial. The actual treatment of *x*-ray burns resolves itself into that employed in burns of other nature, although the medicaments may be slower in producing beneficial results. According to Allen, burns that have not progressed to denudation are amenable to a three per cent solution of pyoktanin. Ulcerative burns that are inclined to resist repair may be treated with a two to five per cent solution of silver nitrate or a weak solution of chromic acid. A one per cent solution of picric acid exerts marked benefit by relieving pain and inducing healing. Benzoated zinc ointment and carron oil are likewise excellent applications, but the oxide of zinc, together with violet and ultraviolet rays, and the high-frequency current are probably as infallible remedies as the therapeutic domain affords. W. F. B.

THE TENDER OF A TEMPTER.

Inasmuch as God tempted Abraham little surprise is occasioned by the knowledge that mortal man has deigned to tempt a brother. It is gratifying, however, to have positive assurance that a sense of right conduct prompted the subject to "lay the bright temptation down," for it is easy to be innocent until one encounters the intrigues of a tempter. The publisher of a medical journal (God save the mark!) which emanates from Saint Louis, Missouri, recently sent a check for twenty-five dollars to a physician of world-wide repute, whose abode is not more than five hundred miles from the aforesaid seat of temptation, with a letter accompaniment stating that any kind of an article would be accepted for the tender. The individual who poses as editor of the claptrap affair was evidently imbued with the idea that every man has his price, but this estimate failed to contemplate the exception interposed by self-respect. The sum was returned, but the rebuff is not likely to prevent the inducement being offered to another.

* * *

This incident should serve as a lesson to a few eminent physicians throughout the country who have jeopardized their good name by falling prey to the golden shekels offered by managements that seek to acquire a semblance of respectability for their mercenary publications by inducing certain medical men, who seem to be vested with more education than ethics, to "sell their birthright for a mess of pottage." Some of these distinguished individuals have not only been presidents of state medical societies, but have even been elevated to the presidency of the American Medical Association, and by reason of these and other honors conferred upon them by the profession they should make themselves worthy of emulation by their confreres. As a matter of fact, however, these men are doing more to lower the professional standard than any equal number of quack doctors extant. Whether intentionally or unintentionally, they are utilizing high positions to acquire personal emolument at the expense of prostituting ethics, and nothwithstanding the proverb that "things are not always as they seem," it seems improbable that "they know not what they do."

ANNOTATIONS.

THE GLUCOSE TREATMENT OF DIABETES.

Arnheim recommends the rectal injection of glucose for diabetes mellitus. This therapeusis may seem contraindicated, but in a diabetic with marked anemia and acetonuria excellent results are reported. The rectal gut was plugged about four inches above the sphincter with a wad of cotton, saturated with olive oil, and then one and one-half to two ounces of a thirty per cent solution of glucose were injected slowly into the rectum. The glucose was administered by the rectum in order to insure extraportal absorption of the major portion of the dose and thereby prevent occurrence of alimentary glycosuria. The acetonuria disappeared as a result of the hydrocarbon alimentation, and although patient resumed a normal diet the glycosuric condition terminated.

APPLICANTS GALORE!

The information has been gleaned that one hundred candidates have applied for the professorship of ophthalmology, otology, rhinology, and laryngology in the University of Michigan. There seems to be a feeling that these specialties comprise a larger field than can be successfully cultivated by any one man of the present generation, and that there should be a division that would insure more attention to the fields of otology, rhinology, and laryngology than has hitherto obtained. There is a probability that the above number will be augmented somewhat before the meeting of the Regents, on which occasion the professorial question will be considered.

CONTEMPORARY.

WORK AS A THERAPEUTIC MEASURE.

[BOSTON MEDICAL AND SURGICAL JOURNAL.]

Among the many rational therapeutic measures which have been advocated of late years, small attention has been paid to the efficacy of work. Rest, exercise, massage, electricity, hydrotherapy, vibration and many other means of treatment have been tried with much enthusiasm by various persons within and without the profession. Of these, perhaps none has had so enthusiastic a following as the so-called rest treatment, introduced in systematic form by Doctor Weir Mitchell, and practised indiscriminately ever since. That the rest treatment is useful and has again and again demonstrated its usefulness in appropriate cases, we make no question. That it has been peculiarly misused is likewise not open to doubt. We venture to say, with small expectation of contradiction, that the rest cure, so-called, has been far more satisfactory in the hands of its founder than in the hands of others, however conscientiously they may have attempted to carry out the lesson which he taught. As a matter of fact, all experience goes to show that our enthusiasms in many methods of treatment often get the better of our judgment, and that discrimination is easily lost in our effort to better a difficult condition. That this undue enthusiasm is, however, a valuable, although unacknowledged, factor of the treatment must also be admitted, and with enthusiasm as such we must certainly have no quarrel.

In view, however, of all the time and attention which has been given to treatment by so-called rational methods, it is somewhat extraordinary that no systematic attempt has been made to systematize a method of treatment which shall have work, either physical or mental, as its fundamental principle. Of course, we recognize the fact that physicians are continually advising exercise, and often physical labor of a more or less definite sort, but so far as our knowledge goes, with the possible exception of Moebius, no one has mapped out a work cure in the same systematic fashion as a rest cure, for example, has been developed. We are so accustomed to consider our patients as individuals of lowered physical and mental vitality that we frequently overlook the fact that their appearance of invalidism is due to quite other causes than those for which rest and recreation could work a cure. It becomes increasingly apparent, as one's attention is directed to the matter, that overwork, as the term is popularly used, means almost nothing. It is the rarest possible experience to come in contact with a person who is really suffering from overwork as such. His hours may be long, his work may be uncongenial, and his physical strength insufficient to meet the demands placed upon it, but to generalize and say that overwork, as such, is the cause of the innumerable nervous breakdowns which are everywhere about us is no longer to be maintained. Our conviction is growing, on the other hand, that the lack of proper employment is rather the source of the various failures which are familiar to every physician. That such employment of the mind and also of the body is conducive to health cannot be questioned, and we are inclined to think that if physicians insisted upon the necessity of work with anything like the frequency that they insist upon the necessity of rest, in dealing with the so-called neurasthenic invalid, they would accomplish far more definite results. If it be true that overwork is rare, and that the moral and physical stimulus which work gives is desirable, it may hardly be questioned that a systematic treatment by work is as rational as a systematic treatment by any other means. If we could realize that many of the ills of life are due to perversions of natural processes rather than to fundamental defects, the rationality of a plan of work as opposed to a plan of recreation or rest or anything else would forthwith become apparent. We await with confidence the formulation of such a method of treatment, which shall have for its aim a building up of temporarily disordered functions through systematic effort and employment. This tendency in sporadic form we see about us everywhere, but its systematic application as a legitimate and useful therapeutic measure seems not yet to have been attained.

THE OPENING OF THE SCHOOLS.

[MARYLAND MEDICAL JOURNAL.]

THIS is the season when fresh postulates for the degree of doctor of medicine begin to move toward the diploma markets. They will number quite an army, these neophytes, when they arrive in Baltimore, and they will be received with carefully-prepared and elaborate enthusiasm if they call at the right recruiting stations. Most of them will have conned several catalogues of as many seats of medical learning. Most of them have been a bit intimidated by the apparent uniformity of what are called requirements for admission. Most of them will have been encouraged by alternatives, exceptions, and conditions. Most of them will avail themselves of alternatives, exceptions, or conditions. Not many will take entrance examinations. Of these but few, very few, will be declined by the examiners, and none, absolutely not one, need return to more appropriate surroundings on account of failure. Any man who can read a college catalogue can begin the study of medicine in Baltimore. Having neither time nor capacity to prepare for any intellectual pursuit, one may still undertake the study of medicine with a fair prospect of getting a diploma of some sort, somewhere, at the end of about four years. After examination comes the state examination, a wholesome terror to the honest or honestly-inclined student, and a negligible proposition to the unscrupulous.

The State Board of Medical Examiners of Pennsylvania, at the recent examinations, rejected nearly twenty per cent of the applicants for license. We are not informed what per cent of medical graduates intending to practice in Pennsylvania presented themselves for examination. The seventy-three who failed were one-fifth part of those who were good enough to desire to comply with the laws of Pennsylvania. According to the State Board of Examiners, the quality of instruction furnished by the medical colleges is largely responsible for the high percentage of failures. Some colleges, it is said, devote so much time to the specialties of medicine that the students do not learn the general principles of the science. An ungentle corrollary to this remark is that some teachers are so poorly grounded in the broad principles of medical science that their teaching is necessarily restricted to those specialties in which they are tolerable crafstmen. A more interesting observation is that many applicants failed on account of general illiteracy.

The subject of general illiteracy has been somewhat discussed by the medical examiners and the profession in Maryland. The examiners have not, so far as we know, published any decided opinion on the subject, but a good many teachers are openly, and even loudly, of the opinion that in rating examination papers the examiners have no right to consider the evidences of illiteracy. They say that a man's orthography may be ever so bad, and yet he may be a very good practical physician. One must admit that in exceptional instances this is true.

Very likely those who object to an inquiry after graduation hold the same view concerning the determination of fitness at the outset of the medical course. Their practice may be consistent either with their personal views or with the representations in the catalogues, but hardly with both. No one has heard of any mortality among undergraduates on account of illiteracy. Rejections at the beginning and failures in course only bring about a change of scene for the student. If he is persistent and has the price, he secures a diploma nevertheless, so that the ostensible requirements of general education are of no service in eliminating the unfit.

There was a time when the country required more physicians than her population could supply upon conditions of good general training, but that time has long passed. In those days the country needed merchants who could only keep accounts by means of notches on a stick or knots on a string. No one contends that a man who can write and do simple arithmetic is too well educated to keep a country store. But we are told that physicians who understand elementary algebra and physics, and can write two hundred words of decent English, have too good an opinion of themselves to settle contentedly in country neighborhoods. There is a little truth in this, for a great ruck of inferior graduates do their miserable best for better educated miners, sailors, farmers, ranchers, and lumbermen.

But if the half-educated physician would be unhappy in such surroundings, what must be his case in a large community, professing a science without mystery, built upon the natural sciences whose rudiments are less familiar to him than to a well-qualified engineer or newspaper man, schoolmarm, farmers'-institute lecturer, deputy fish commissioner, mine inspector, veterinarian, dairyman, well-digger, weather observer, electrician, brewmaster, undertaker, or even lawyer.

MEDICAL NEWS.

"FUTURE PROVISION FOR THE INSANE."

DOCTOR WILLIAM M. EDWARDS, Medical Superintendent of the Michigan Asylum for the Insane, recently read a paper under the above caption at the meeting of the Joint Board of Trustees of Michigan Asylums, which convened in Pontiac. The subject is of much importance to the medical as well as to the lay taxpayer, and therefore the following extracts will interest our Michigan constituency:

* * *

The care of our insane has become a matter of much importance to the people of Michigan. The annual expenditure for this purpose is large and increasing. With five regularly organized state asylums, one quasi state institution (Wayne county) and several private hospitals we are unable to meet the demand for room. Our asylums much of the time are crowded beyond their safe hygienic limit and we have no prospective increase of capacity or settled plan for meeting future needs. The more highly differentiated life becomes the greater will be the number of insane persons to be cared for. The future calls upon the taxpayers for the support of this class will not be lessened and we can neither hope for nor expect relief from the financial and economic burden of caring for the insane. Public sentiment has changed during the last few decades so that many persons are now brought to the asylums whose admission formerly would not have been desired. This growing greater confidence, deserved by reason of the hospitalization of our institutions and their modern methods, will lead to a further broadening of the boundaries limiting those seeking treatment and a greater annual increase of patients. As we grow older there is relatively a greater number of senile cases both cumulative in the asylums and seeking admission.

* * *

During the fiscal year ending June 30, 1904, there were 1,043 admissions with a net increase of 165. This net gain has been as follows: In the Michigan asylum, 57; Eastern Michigan asylum, 10; Northern Michigan asylum, 51; Upper Peninsula hospital, 29; State asylum, 18. It would be misleading to assume this increase as an average of the annual number for which the state must provide. In three of the asylums the increase may be said to be about normal. At the Eastern Michigan asylum there was an increase of but 10. In the previous fiscal year the net increase was 48, and in the year ending June 30, 1902, it was 105, so it seems but fair to assume that with room to receive all those who would probably be committed to the asylum the annual net increase in this district would not be less than 50. The increase of 29 at the Upper Peninsula hospital, the superintendent informs me, is below the average, which has been 40 for a number of years. Taking these figures as representing the normal average increase in these asylums the average increase in the entire state would be at present at the rate of 216 per annum. Allowing for any overestimation and for counting twice any patients who have been admitted to either of the other asylums and transferred to the State asylum at Ionia we may assume the natural increase to be only 200.

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The Michigan Asylum for the Insane at Kalamazoo now has 1,575 patients. An addition of 425 to this number could be cared for with the present heating plant with two more boilers, the electric lighting system, with the addition of one 50-kilowatt dynamo, the present laundry, the same water system, sewer system, power plant, stores, refrigerating plant, bakery, shops, barns and outbuildings, farms, gardens and slaughter house. No additional expenditure would be required for fencing, grading, under drainage or beautifying grounds. No new utensils, machinery, wagons, carriages, or sleighs would be required. The same superintendent, assistant superintendent, high-priced assistant physicians, steward, druggist, accountant, engineer, assistant engineer, electrician, foreman of construction, painter, blacksmith, tinner, chief cook, baker, butcher, laundryman, farmer, florist and gardener and coachman would care for an asylum with 2,000 patients practically as well and almost as easily as one with 1,600. Two additional assistant physicians, more nurses and attendants, some kitchen and laundry helpers and perhaps some outside help would be required in this larger asylum, but none would be of the higher salaried class. A new asylum for 1,200 patients would require a duplication of all the utilities, officers and employes previously enumerated.

* * *

The Upper Peninsula hospital at Newberry on June 30, 1904, had received in special appropriations and expended in improvements and repairs $560,282.74, and had at that time a capacity for 595 patients. The per capita cost of the plant, based upon the above figures, was $941.00 per bed. A finer analysis might show possibly a less cost but this is approximately accurate. It is proposed to erect at Kalamazoo a group of buildings to accommodate 400 patients, at an estimated per capita cost of $414 per bed, or a total of $165,897.66. Taking the Upper Peninsula hospital as the type of a new institution the difference between the cost of establishing a new plant for 600 patients and the erection of additional buildings at the Michigan Asylum for the Insane for 400 patients is at the rate of $527 per bed in favor of building at the established asylum. To allow for possible contingency or error we may assume the difference to be $500 per bed. At this rate it would cost $300,000 more to provide for 600 at any new asylum than at one of the existing institutions.

* * *

If the state shall decide to increase each of its four principal institutions to a capacity of not less than $2,000 patients then we shall have room at the Michigan asylum for 425 patients, Eastern Michigan asylum for 750, Northern Michigan asylum for 825, and at the Upper Peninsula hospital for 1,450, a total of 3,450. With our annual increase of 200 patients this plan will provide for the growth for the next seventeen years. We have before estimated that the cost per bed in a new institution is $500 more than in additions to the older asylums. Our figures probably would not be maintained at this rate as the larger a new institution grew the less would be the per capita cost of additional beds. Assuming that in any event it will cost $350 more per bed, a reduction of 30 per cent from our estimated figures, the cost of providing room for 3,450 patients in new asylums would be $1,207,500.00 more than in existing ones. We previously estimated that the fixed charges of maintaining 1,200 patients in a new asylum annually to be $15,000 more than to care for the same number in existing institutions. If we assume that our present asylums shall not be enlarged then it would require three new ones, having the average capacity of our present ones, to care for our estimated increase of 3,450 in the next seventeen years. The annual excess of the fixed charges in these three institutions would be $45,000, and for the seventeen years would amount to $765,000. This added to the excess of cost of providing the plants for this number of patients gives us a total of $1,972,000.

In other words, by increasing each of our four principal asylums to a capacity of not less than 2,000 patients, and please note that I have not established this as a maximum limit, we shall have provided under such a policy for the increase for the next seventeen years, granted that it will be at our estimated annual rate of 200. By this policy the state will have saved in its construction account $1,207,000. It will save in its annual fixed charges of operation $765,000, or a total saving at the end of this period of $1,972,000, allowing nothing for interest.

* * *

These figures seem large and may be larger than actual experience would demonstrate. The difference in actual construction at a new asylum and liberal estimates at another for 600 and 400 beds has already been discounted 30 per cent. To any one opposed to this plan for increased accommodation and who may claim errors and fallacies and advocate that our asylums are large enough and that the increased number of insane people in the next seventeen years should be cared for in three new asylums, having each the average capacity of our present ones, a further discount of 24 per cent may be allowed for the sake of argument, and there will still be a saving of $1,500,000 to the taxpayers.

MINOR INTELLIGENCE.

DOCTOR FLEMMING CARROW has leased offices in the Washington Arcade, suite 511, Detroit, where he will be after October 1.

AN addition is to be built to the Brockton Hospital, Brockton, Massachusetts, at a cost of twenty thousand dollars. The annex will be designed especially for surgery.

D'HAELUIN reports the case of a child in which rythmic contraction of the right and left auricles was produced by the injection of the serum of Locke, thirty-six hours after its demise.

DOCTOR WILLIAM F. BREAKEY, of Ann Arbor, read a paper entitled "Mycosis Communicated from Cattle," before the American Dermatological Association, at its recent Niagara Falls meeting.

THE Sydenham is the name applied to a new building in New York City, the offices of which will be leased exclusively to physicians. The plan is somewhat unique, but it remains to be seen whether the idea is practical.

A REMARKABLE obstetric case is reported from the Netherlands. A woman gave birth to five children—four females and one male. The infants were alive at birth, but were imperfectly developed, and all succumbed within an hour.

A MONUMENT was unveiled at Paris on July 16, by President Loubet, in memory of Pasteur. The ceremonies were attended by Madame Pasteur, various representatives of the government, and many distinguished scientists.

TEN thousand dollars of the Phipps' donation to Johns Hopkins University will be utilized in constructing a dispensary for the treatment of tuberculosis. The building will be two stories in height, thirty-five feet long and thirty feet front.

EXPERIMENTS are being made at the tuberculosis camp, which was recently established on North Brothers Island, near New York City, to ascertain what effect sea air has upon consumptives. Thus far the results are said to have been very encouraging.

IN his will the late Sylvester S. Batton, of Newark, New Jersey, bequeathed five thousand dollars to Saint Barnabas Hospital and Home for Aged Women, of Newark, and five thousand dollars to the Babies' Hospital of the New York Postgraduate Medical School.

ROSENQUIST, in a paper dealing with the prevalence of syphilis in the Russian empire, remarks that in the city districts about ten per cent of the infections are extragenital, while in the rural districts from seventy to ninety per cent of the cases are of extragenital contraction.

A COURSE of instruction covering a period of four weeks has been inaugurated by the Board of Health, of Manila. The course is intended for the health officers of the islands, and will be repeated monthly, that all officials may become versed in the methods of modern sanitation.

REPORT says that Madame and M. Currie have been awarded prizes of ten thousand crowns each by the Royal Academy of Stockholm, in recognition of their contributions to science, especially the discovery of uranium rays, which are of signal importance in the fields of chemistry and physics.

A NEW hospital building will be erected in Chicago by the physicians of the Chicago Polyclinic and Hospital at a cost of one hundred fifty thousand dollars. The site upon which the structure will stand has a frontage of two hundred feet and is located at the corner of Oak street and LaSalle avenue.

THE City of New York loses millions of dollars yearly by reason of tuberculosis. Valuing a human life at the low estimate of fifteen hundred dollars, and recording the deaths of persons between the ages of sixteen and forty-five, a New York physician reached the stupendous total of twenty-three million dollars.

A VETERINARY surgeon of Dublin, Ireland, is reported to have discovered that turpentine is an antidote in carbolic acid poisoning. In treating two horses which had been poisoned he unintentionally substituted turpentine for olive oil, with the result that the animals recovered, although one of them had lapsed into unconsciousness before the doctor's arrival.

THE Saint Louis Society for the Prevention of Tuberculosis has been recently organized. The aim of the society is to instruct the public regarding the contagiousness of the disease and promote measures calculated to decrease the death rate therefrom. The line of education planned by the society is to issue tracts, deliver public lectures—illustrated by stereopticon views, and give personal instruction in hygienic living.

HAWAII has asked the United States government to provide for its leper colony, and for a scientific study of the disease. In the settlement for the unfortunates at Molokai there are confined nine hundred fifty-one native Hawaiians, thirty-four Chinese, ten Portuguese, ten English and Germans and four Malays.

DOCTOR ROBERT KOCH will retire from the directorship of the Institute for Infectious Diseases at Berlin, on October 1. The doctor will be allowed full salary after his retirement and will be privileged to lecture or not as he chooses. The government recently granted him honorary membership in the Academy of Sciences.

YALE UNIVERSITY is the recipient of two hundred fifty thousand dollars from William B. Ross, of New York City. The sum was given in memory of the late Doctor Jared Linsly, an esteemed New York physician of the past generation, and will be expended in adding another section to the University library.

IT is said that the Panama Canal Commission will employ one hundred thousand yards of wire gauze as protection against contracting malaria through mosquito bites. Over twenty thousand yards will be required to screen the hospitals and seventy-five thousand to protect the inhabitants of the houses along the canal.

A BULLETIN, issued recently by the Indiana State Board of Health, which shows the alarming progress of phthisis in that state, has caused the officials to seek effectual means for the control of the disease. In June three hundred sixty-five persons died from phthisis, which is an increase of fifty-seven over the death rate of the preceding month.

DOCTOR CHANG A. HOLT, a Chinaman, born at Canton twenty-six years ago, and the first of his countrymen to be admitted to medical practice by the San Francisco board of examiners, is now a full-fledged physician and surgeon. He has become a Christian, and will pursue the healing art in the celestial empire after touring the United States.

HONORABLE FRANK WELLS, president of the Michigan State Board of Health, recently submitted at a meeting of this body, a manual for the use of health officers throughout the state. The design of the manual is to give, in a complete and comprehensive form, instructions which will enable the local health officer to act intelligently in the best way for the restriction and prevention of dangerous communicable diseases.

DOCTOR R. G. LIGHTLE, of Searcy, Arkansas, who disappeared on May 22, and was supposed to have been burned in his barn, which was consumed on that date, has returned home, notwithstanding his death seemed so certain that insurance companies paid nineteen thousand dollars on policies held by him. He explains his sudden departure by saying that he had a cadaver in his barn for dissection and feared arrest for grave robbery, believing that the skeleton would be discovered in the ruins.

THE Board of Aldermen, of New York City, recently made the following appropriations: Two hundred forty thousand dollars for the Board of Health; one hundred thousand dollars for cleaning the sewers in the Borough of Manhattan; and sixty-seven thousand dollars for a new boat to carry patients to the hospital for contagious diseases on North Brothers Island.

SMALLPOX has appeared in epidemic form at the sacred city of Zion, sixteen cases having already been reported. Dowie will permit none of his followers to receive medical attention, and, as vaccination is prohibited in Zion City, the disease threatens to assume larger proportions, although the prophet is making a desperate effort to heal the victims by his alleged divine power.

ONE hundred sixty-five persons afflicted with tuberculosis were treated at the National Jewish Hospital for Consumptives, in Colorado, during the past year. The hospital was founded in 1900 and during the four years of its existence five hundred forty-four patients have been attended with very favorable results, a large percentage having been either cured or improved.

STATISTICS show that Russia is the breeding station of hydrophobia. Consul General Guenther, at Frankfort, Germany, has presented figures bearing on this point, as well as attesting the efficacy of vaccination as a preventive of hydrophobia, the claim being made that only one and one-half per cent of persons bitten by rabid animals and vaccinated have suffered death as a result of the bite.

INVESTIGATIONS on the mosquito are being conducted at the University of Montana biological station, located at Flathead Lake in that state. Several species of the pest have thus far been found, but anopheles maculipennis, the variety which causes malaria, is very rarely seen in that region. Montana suffers but little from the fever, and no case has yet been reported from the district in which the studies are being pursued.

OBSERVATIONS made upon one thousand babies at the Liverpool Infirmary for Children, disclose the fact that mortality is less among infants fed exclusively upon mother's milk, than among those who are fed prepared foods, cow's milk, biscuits, et cetera, together with mother's milk. The results show that 84.14 per one thousand of the former class die, while in the latter class the death rate is 133.86 per one thousand.

MARY MCCANN, the sixteen-year-old Irish girl who nobly assisted in rescuing so many women and children in the late "General Slocum" disaster in New York, has been awarded a gold medal, together with a handsome purse by the coroner's jury of that city. At the time of the accident this girl was convalescing from scarlet fever on North Brothers Island, and nearly lost her life in her heroic efforts to save others, having been taken from the water by a hospital attendant in an utterly exhausted condition.

SUICIDE is said to be enjoying a gradual increase in New York City. The estimated number of self-inflicted deaths during the first six months of 1904 is four hundred fifty, while two hundred sixty-four persons made unsuccessful attempts to end their existence. It is reckoned that the number of suicides will exceed nine hundred this year, as against eight hundred six last year.

NEW YORK CITY is adequately supplied with medical protection. "The Medical Directory of the City of New York," which was issued recently, contains the names of five thousand nine hundred nine physicians, who are distributed throughout the city as follows: Manhattan and Bronx, four thousand two hundred eleven; Brooklyn, one thousand five hundred nineteen; Queens, one hundred twenty-one; and Richmond, fifty-eight.

HECKER remarks that of sixty-two stillborn children upon whom he made investigations, fifty-three per cent were syphilitic. In ninety per cent of the cases the kidneys were involved, in sixty-one per cent the spleen was affected, and other structures were embraced in the following order: thymus gland, fifty per cent; pancreas, forty-six per cent; bones, forty-three per cent; liver, twenty-three per cent; and lung, seventeen per cent.

A VERY unusual case of childbirth is reported from Germany. In the eighth month of pregnancy a woman of twenty-five gave birth to a child. Shortly afterward the heart sounds of a second fetus were recognized in the uterus by the attending midwife, and after a period of seventeen days a second child was delivered. The mother's recovery was uneventful, and she left the bed nine days subsequent to delivery of the second child.

MANY of the cities of Eastern Cuba, which the United States thoroughly equipped with sanitary appliances during the years following American occupation, have assumed a filthy appearance, and the hygienic conditions in some sections are as bad as they were during Spanish supremacy. The United States government has frequently upbraided the Cubans for their neglect and seeming indifference to public health measures, and President Palma has finally decided to reform the municipal tax system so that a sanitary tax may be levied throughout the island.

DOCTOR JAMES HENRY DUNN, of Minneapolis, Minnesota, read a paper before the American Surgical Association, which met recently in Saint Louis, and was later in the day found dead in bed at the Southern Hotel. He was a conspicuous figure in the medical profession of the northwest, occupying the chair of surgery in the University of Minnesota, and enjoying connection with Minneapolis hospitals. A paper contributed to this journal some time ago, by Doctor Hal C. Wyman, of Detroit, gave an account of the excellent surgical work accomplished by Doctor Dunn.

Four of the buildings at Dunning, Illinois, for the erection of which Cook County bonded itself to the extent of $500,000, have been completed. They are the Home for the Cure of Tuberculosis, and three cottages for the treatment of the insane. The cottages are constructed according to modern ideas, are without window bars, and resemble private residences rather than hospitals for the insane.

The Levi Cooper Lane Library of Medicine and Surgery, which is to be established in San Francisco as a memorial to the eminent surgeon, Doctor Lane, will be the largest collection of medical and surgical works in this country, the Library of the Surgeon-General excepted. The funds with which the library is to be founded have been furnished by a bequest of Pauline C. Lane, who was the wife of the late surgeon.

An exhibit to demonstrate that yellow fever can be transmitted only through the bite of the mosquito, will be conducted at the Saint Louis Fair by Doctor Frederico Torralbas, a member of the Health Board of Havana, Cuba. A number of tents provided with screens, and similar to those used by the American and Cuban surgeons when investigating yellow fever on the island, will be erected, and men will be utilized in the experiments.

Paris has a new school of psychology, founded by followers of Charcot, for the purpose of investigating mind reading, mental suggestion at a distance, clairvoyance, presentiments, automatic writing, double personality, et cetera. The association is composed almost entirely of medical men, and in this particular differs from other bodies engaged in studying such questions. The professional duties of physicians bring them in contact with patrons of these curious phenomena and therefore afford special advantage for psychic research.

Forty per cent of the territory covered by Los Angeles is without sewer provision. This portion of the city is supplied with vaults and cesspools, and notwithstanding the laws regarding their use are rigidly enforced, the recent report of the health officer discloses the fact that nearly all cases of typhoid, diphtheria and other common diseases, have been confined to this district. Fortunately the city is about to construct an extensive sewerage system, the sum of one million dollars having been placed at the disposal of the construction committee for this purpose.

The American Medical Society for the Study of Alcoholism and Other Narcotics was organized on June 8, 1904, by the union of the American Association for the Study of Inebriety and the Medical Temperance Association. The membership of the organization is limited to physicians. The primary object of the society is to create greater enthusiasm among physicians regarding alcoholism and other drug evils; to study the effects of such vices upon the system; to prevent the sale of "absolute" cures for the drug habit, and to encourage legislation for the care and treatment of such subjects.

MAYOR McCLELLAN, of New York City, has persuaded the Board of Aldermen to place five million five hundred thousand dollars at the disposal of the Board of Education, for the purpose of bettering the insufficient school accommodations. The sum will be utilized to purchase sites for playgrounds, to improve the lighting systems, and to remodel the equipment for the cooking schools, kindergartens and workshops operated in connection with the public school system.

PHILADELPHIA has adopted a novel means of enforcing the vaccination laws. The fifty medical inspectors of the city are conducting a house-to-house canvass, and persons who refuse to allow vaccination are registered at the health department, together with the names of their employer and physician. They are informed that every factory, mill and public institution in which a case of smallpox is discovered, will be closed for fumigation, which would necessitate a stoppage of work for an indefinite period. The latter bit of information usually has the desired effect.

A MEMORIAL, to perpetuate the name of Benjamin Rush, was unveiled recently at Washington, District of Columbia, with befitting ceremony. The introductory address was given by the president of the American Medical Association, Doctor John H. Musser, of Philadelphia, and Doctor James C. Wilson, of Philadelphia, delivered an oration on "Benjamin Rush." President Roosevelt accepted the monument in behalf of the people of the United States. The testimonial, which is of bronze, is seven feet high, and is mounted on a circular base of stone ten feet in height.

THE corner stone of the new medical building of the University of Vermont was laid on July 5, which was the one hundredth anniversary of the founding of the University. The event was celebrated with much ceremony, and speeches were made by Honorable John G. McCullough, Governor of Vermont, Mathew Henry Buckham, president of the University, Doctor Henry C. Tinkham, dean of the department of medicine and surgery, and Doctor A. F. A. King, professor of obstetrics. The graduation exercises of the department of medicine occurred on July 6, when fifty-six candidates received the degree of Doctor of Medicine.

DOCTOR WILLIAM RHYS PRYOR, of New York, obstetrician and gynecologist of wide repute, died at Saint Vincent's Hospital in that city, August 26, in his forty-seventh year. He recently performed an operation in a room in which the temperature was 104° Fahrenheit, and collapsed immediately afterward, when he was removed to the hospital, where he died. He was the author of several medical works, the principal one being a "Text-Book of Gynecology." In 1881 he graduated from the College of Physicians and Surgeons of New York City. He was a son of ex-Justice Roger A. Pryor, of the Supreme Court, and had acquired a large practice, but the bulk of his work was among charity patients.

SIR FREDERICK TREVES, in commenting on the war in the East, says that the Japanese army is excellently equipped in field armament, which in many details is very ingenious. The Red Cross Society in that country is an admirable organization, remarkable for its size and distribution. It is said to be capable of supplying upwards of five thousand nurses, two thousand of whom are males. The women nurses are not assigned to duty at the front, but are in charge of the various military and Red Cross hospitals throughout the Mikado's domain.

DOCTOR WILLIAM OSLER, of Johns Hopkins University, has received the appointment of Regius professor of medicine at the University of Oxford, England, with the approval of King Edward VII. Doctor Osler has devoted his entire life since graduation to medical education, and goes to Oxford eminently qualified by his broad medical knowledge. The doctor was born in Tecumseh, Ontario, and received his medical degree at McGill University in 1872, since which time he has imparted medical instruction successively at McGill, the University of Pennsylvania, and Johns Hopkins, having remained with the latter institution since 1889.

THE Fourth Pan-American Medical Congress will be held in Panama the first week in January, 1905. President Amador, of the Panama Republic, has appointed the following officers: President, Doctor Julio Ycaza; vicepresident, Doctor Manuel Coroalles; secretary, Doctor Jose E. Calvo; treasurer, Doctor Pedro de Obarrio; committee on organization, Doctors J. W. Ross, J. Tomaselli, and M. Gasteazoro. The Congress will comprise four sections, appointments for which are as follows: Surgical Section—Major Louis LaGarde, president; Doctor E. B. Harrick, secretary. Medical Section—Doctor Moritz Stern, president; Doctor Daniel R. Oduber, secretary Section on Hygiene—Colonel, W. C. Gorgas, president; Doctor Henry E. Carter, secretary. Section on Specialties—Doctor W. P. Spratling, president; Doctor Charles A. Cooke, secretary.

PROFESSOR KOCH says that the report of the British Royal Commission on the subject of bovine and human tuberculosis does not contain a single declaration which renders necessary the modification of his formerly expressed conviction that bovine tuberculosis cannot be transmitted to man through the medium of food. He says that although a butcher at the slaughter house may become infected by injuring himself when handling tuberculous meat, the infection invariably remains local, and that neither the ingestion of bovine flesh nor milk can transfer the disease. Koch says that notwithstanding the fact that at his instance, three years ago, the Prussian minister of public instruction requested all physicians in charge of public hospitals to report every case of transmission of the disease from animal to man, and notwithstanding the fact that veterinary surgeons declare five per cent of all cows tuberculous, he is still waiting to hear of the first case to disprove his observations.

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ORIGINAL ARTICLES.

MEMOIRS.

THE FAUCIAL TONSILS; THEIR USE AND ABUSE.*

BY JOHN NORTH, A. M., M. D., PH. C., F. S. SC. (London) TOLEDO, OHIO.

IN speaking of the faucial tonsil, Lennox Brown says: "Of the primary value of these glands there is considerable doubt, but it is certain that at a very early age, and in the great majority of instances they exist only to become diseased, so much so that a very eminent physician has stated that were he to play the part of a Frankenstein and endeavor to create a man, he would omit the tonsils."

The term tonsil is applied to the collection of so-called lymphoid tissue known as the faucial tonsil.

The tonsils are situated on each side of the fauces, between the anterior and posterior pillars of the soft palate. Gray says: "They are of a rounded form, and vary considerably in size in different individuals." He does not give their size. Holden says: "The tonsil consists of an aggregation of muciparous glands." No mention is made of their size. Ellis and Ford say: "This body (the tonsil) is an aggregation of ten or twenty follicular glands, like those over the root of the tongue, and it occupies the interval between the arches of the palate. Its size varies much. Its situation is marked by the presence of small holes in the mucous membrane, without any surface prominence; but when enlarged from disease it projects, diminishing thus the size of the isthmus of the fauces." Ranney says: "The tonsils are small bodies situated between the anterior and posterior pillars of the fauces upon either side." Delavan, in "Satterthwaite," says: "The tonsil consists essentially of a reduplication, more or less extensive, of the oral mucous membrane, containing in its folds an abundance of the so-called adenoid tissue." Mackenzie says that the tonsils are generally about as large as a hazelnut, and "can be just seen when the mouth is wide open, projecting into the isthmus faucium." Sajous says: "Each tonsil is about nine lines long and six lines wide, and its thickness is usually so limited in the normal condition as to render its examination very difficult." Rumboldt says: "If they are in a healthy condition they do not preject within sight; if they are in sight, then they are in a more or less diseased condition." Doctors Bosworth, Woolen and others claim that normally there are no tonsils—that the enlargements we call tonsils are in reality abnormal conditions. Doctor Roe says this in the main is true. Normally the collection of glands at these points are not noticeable on inspection of the throat, and therefore no tonsil appears to exist.

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* Read before the NORTHERN TRI-STATE MEDICAL ASSOCIATION, at the Adrian, (Michigan) meeting, July 26, 1904.

Every rhino-laryngologist knows that more than fifty per cent of all the throats he looks into have no tonsils, as we understand the word tonsil, referring to a protruding gland occupying the space between the anterior and posterior pillars. If we were to look into the throats of a large number of people, men, women and children, we would be surprised at the small number of tonsils that we can see, and when we do find them we find them associated with chronic naso-pharyngeal troubles, and not with a healthy naso-pharynx.

Now let us inquire and examine into what we do find between the anterior and posterior pillars of the soft palate. Gray, without saying anything about their size or thickness, says: "Its inner surface presents from twelve to fifteen orifices, leading into small recesses, from which numerous follicles branch out into the substance of the gland. These follicles are lined by a continuation of the mucous membrane of the pharynx, covered with epithelium, their walls being formed by a layer of closed capsules imbedded in the submucous tissue. These capsules are analogous to those of Peyer's glands; they contain a thick, grayish secretion." In another place Gray says: "Peyer's glands may be regarded as aggregations of solitary glands." He also describes solitary glands as "small round, whitish bodies, from half a line to a line in diameter, consisting of a closed saccular cavity, having no excretory duct, and containing an opaque white secretion. Their free surface is covered with villi, and each gland is surrounded by openings like those of the follicles of Lieberkiihn. Their use is not known." Again: "The simple follicles or crypts of Lieberkiihn consist of minute tubular depressions of the mucous membranes, arranged perpendicularly to the surface, upon which they open by small circular apertures." If the capsules of the tonsils are analogous to those of Peyer's glands we would expect to find them of the same size in all cases in heath, as we find no variations in size in Peyer's glands, except in disease. Ellis and Ford say: "In its structure it resembles the follicular glands. In the bottom of the holes or depressions on the surface of the mucous membrane, are small apertures leading into recesses of follicles; these recesses are lined by mucous membrane, and are set around with closed capsules filled with a grayish fluid and contain cells, and bodies like free nuclei. The capsules do not appear to have any apertures." Delavan, in "Satterthwaite's Histology," says: "The minute structure of the adenoid tissue of the tonsil does not differ from that of other follicular glands (those of the intestines, et cetera)."

In the healthy condition the space between the anterior and posterior pillars is an inverted trouth; if we place our fingers in it without applying pressure we feel a smooth surface, but if we apply a little pressure we find a thickened condition of the mucous membrane. If we produce a contraction of the superior constrictor muscle as in gagging, we find the muscle pressing out this thickened membrane, and we feel and see a projection filling up the space between the pillars. Now the question arises, what does this thickened condition of the mucous membrane consist of? I will not take time to discuss the anatomy and histology of mucous membrane, as you are all familiar with it. Mucous membrane is described as composed of three layers:

(1) A superficial layer, composed of epithelial cells.

(2) The mucous proper, a layer composed of white fibrous and yellow connective elastic tissue, embracing within their meshes blood-vessels, smooth muscular fibers, different varieties of small glands, and presenting minute processes or villi.

(3) An external layer of loose connective tissue, the submucous cellular tissue.

As to the function of the epithelial cells, I can do no better than to quote Bosworth: "We find the mucous membrane covered with epithelial cells of various character and arranged in various ways, according to the locality and special function which it subserves: the object of the epithelial cells being merely the secretion of mucus. In these tissues we may regard each individual cell as a typical gland, displayed over the surface of the mucous membrane, whose object is to keep the membrane softened and moistened. In fact, nature endows the membrane in this manner with its own lubricating apparatus. It is found, however, that epithelial cells simply displayed in layers on an unbroken surface are unequal to the demand. In other words, distributed in this manner, they are not equal to supplying a sufficient quantity of mucus for lubricating the passages. To remedy this deficiency, nature resorts to a very simple device for extending the secreting surface. This consists in folding the membrane upon itself, as it were, or in other words bending it down into the tissues and back again, to form a small flask-like cavity which is called a follicular gland. In other cases, instead of forming a straight fold, the pouch-like cavity of the simple follicle is folded on itself a number of times, forming a group of small flask-like pouches, as it were, which uniting, open upon the surface by a single orifice, thus constituting what is known as a racemose gland The arrangement of glands and follicles in the mucous membran., therefore, I take it are for the purpose of enlarging the surface over which the epithelial cells may be distributed, and therefore increasing the secreting power of the membrane, in order that its surface shall be constantly supplied with an abundant quantity of mucus, the normal lubricant of the membrane."

In what is known as the faucial tonsil we have reduplications of the mucous membrane making from twelve to sixteen or even twenty of these follicles, the orifices giving us the crypts of the tonsil. This aggregation of twelve to sixteen follicles is what we call the tonsil. Is it a gland or a collection of glands?

The principal function of this aggregation of follicles in this inverted pouch between the anterior and posterior pillars of the soft palate is to lubricate the bolus of food in its passage to the stomach. In the act of deglutition the contraction of the superior constrictor and palatoglossus muscles presses upon the tonsil, and forces out the accumulated mucus from its numerous follicles.

Other functions are attributed to the tonsil in addition to that as a lubricator of food. Almost every one has a favorite theory in regard to the function of the tonsils. Some of them are hardly entitled to the dignity of a theory, but are merely hypotheses. Some of the theories should receive some attention. One strongly advocated by Doctor Rice is that the tonsil was a blood elaborating organ. This can hardly be borne out by the facts when we more thoroughly examine the case.

I have never met with a case of enlarged tonsils in which the patient was not better physically after their removal. In cases wherein the tonsil is normal in size; that is, does not fill up the space between the pillars, and in cases wherein they have been removed, we do not find deficient elaboration of blood, but the reverse is usually the case.

Others claim that the tonsil is a "leucocyte manufactory," and that on this account the tonsils act as sentinels, or as it has been expressed, act as guard-houses and send out squads of sanitary police, in the form of phagocytes, that stand guard at the entrance of the follicles to catch and destroy any germ that might attempt to enter the tonsil, or even pass through the isthmus of the fauces. It may be true that the germs of disease may be destroyed when they lodge upon the surface of the normal tonsils, but when we have any enlargement of them, we find the orifice of the follicles wide open, and the germs enter and find an excellent media for development. It is a very nice theory, and one that seems to please the public. They have vivid pictures drawn in their minds of the phagocytes setting upon tonsils, ready to destroy any and all the germs that attempt to enter the system through the mouth. The public are not alone in this, but even some physicians share the same opinion, and think that the tonsils are placed in the fauces for some use, and the larger they are the more capable they are of performing their functions, and that they should never be disturbed until they reach such size as to interfere with respiration, and then recommend that a little of the surface be clipped, but that care be taken not to remove too much, as it would interfere with their proper function—which is true in enlarged tonsils, to a certain extent, for they would lose their function as germ and poison absorbers, which seems to be about the only function that enlarged tonsils possess.

In prehistoric times, and in some of the savage tribes at present, that depend upon dry nuts and roots for food, something was required to lubricate the bolus of food. But with our modern cooks and method of preparing food, a lubricant is not necessary.

Time will not permit me to take up and consider all the theories that have been advanced in regard to the physiological function of the tonsils. Most of them are only theories, and a theory at best is only scientific guessing.

The contents of the crypts or follicles of the tonsils when in a healthy condition consists of mucus with exfoliated epithelial cells. It is a question whether anything else is found. Cultures made from their contents do not show the presence of any microorganism. When there is enlargement of the tonsils the follicles become larger, and are filled with a yellowish substance composed of fat-molecules, detached pavement-epithelium, lymph-corpuscles, small molecular granules, and cholesterin-crystals, which probably proceed from retained and decomposed epithelial matter, and perhaps from the bursting of the capsules, which have undergone retrograde metamorphosis and fattey degeneration. Cultures from their contents show a large number of micrococci.

An enlarged tonsil is not an hypertrophy, but an hyperplastic condition dependent upon the formation of new tissue. When a tonsil becomes enlarged or thickened, so that it can be observed or feels thick to the touch, such as would be produced by the reduplication or aggregation of a number of simple and compound mucous follicles, then we have an abnormal product, a tumor to deal with.

Enlarged tonsils appear to be congenital in some cases, yet I doubt if they are ever found in the newborn child. It is often met with in the first months of life.

Enlarged tonsils are prone to decrease in size after thirty years of age, yet some of the most troublesome cases I have ever met with have been in persons past thirty.

Enlarged tonsils are divided into (a) the hard or fibrous, and (b) the soft or dermoid.

For a convenience of clinical study from a therapeutical standpoint we divide enlarged tonsils into three groups.

(1) Those which are decidedly increased in volume, so as to interfere with deglutition and with respiration.

(2) Flat (diffused) tonsils, which in their average condition project into the fauces but slightly, which become prominent during the act of retching. They are often associated with a rheumatic tendency or diathesis.

(3) A third class of tonsils may encroach upon the pharyngeal space and not appear beyond the full margin of the half-arch, for the reason that in consequence of repeated attacks of inflammation the anterior pillars have become firmly adherent. In process of enlargement the tonsil carries with it the palato-glossal fold, which may be much thicker than normal, or may be spread out over the surface of the tonsil in this layer of mucous membrane.

As an enlarged tonsil is a pathological product, it cannot perform its physiological function. A tumor in the fauces interferes with the proper functions of the throat and fauces.

Some children are affected with enlarged tonsils from birth. Children with enlarged tonsils are usually impaired in health. The functions of digestion, respiration, vocalization and nutrition are interfered with. The child presents that peculiar stupid countenance so often observed in enlarged tonsils, with open mouth, drooping eyelids, dull expression, thick voice, and the profound impress of constitutional impairment, as well as intellectual dullness.

Doctor Bosworth says: "While we occasionally meet with children with enlarged tonsils who enjoy apparently perfect health, yet I think it is the rule that the presence of these bodies in the fauces gives rise to a more or less notable impairment of the general health."

In order to determine the relations of the enlarged tonsils in children to their general physical development, Doctor Upsenski examined a number of children between the ages of ten and fourteen. He found fifty-two cases in which enlargement had taken place. Of these twenty were deficient as to height, weight, and circumference of the chest for their respective ages; a few were myopic; thirty-seven lacked acuteness of hearing; most of them were anemic, with weak and hoarse voice. Breathing through the nose was difficult, and in most cases obstructed. With the tonsillar enlargement there was also granular or trophic pharyngitis in almost every case, and in many there was swelling of the glands of the cervical and submaxillary region.

Doctor Erwin reports a case of epistaxis occurring in a child with enlarged tonsils. Treatment was of no avail till the tonsils were removed, when the epistaxis ceased. He thought that the hemorrhage was due to continuous pressure upon the veins of the neck, producing chronic enlargement above.

Doctor Weirs relates the case of a boy twelve years of age, who had suffered from vertigo for three years. The attacks were induced by stooping, and were sometimes accompanied with vomiting. Nothing abnormal could be discovered in any of the organs, except enlargement of both tonsils. As pressure upon the carotids and vagi might account for the vertigo, in the absence of any other apparent cause, both tonsils were amputated; the attacks at once ceased.

Doctor Stucky says: "Of all the diseases of the upper air-passages I know of none more conducive to the production of serious after-effects than tonsillar hyperthrophy."

A child nine years of age was brought to my office. He was small, puny and anemic; he had never been able to swallow solid food, could not articulate well, and had always been a poor sleeper. Both tonsils were very much enlarged. After the removal of both tonsils with the tonsillotome, he could eat any kind of food, sleep sound, is gaining in flesh, and his speech is much improved. We find that people who frequently have attacks of quinsy are always troubled with enlarged or diseased tonsils. In some of these cases the tonsil is only moderately enlarged, not large enough to interfere with either deglutition, respiration or vocalization, but it is found to be adherent to the pillars of the fauces; the follicles are diseased and easily take on inflammatory action. These cases cannot be relieved of their periodical attacks by local or constitutional treatment alone. After the removal of these tonsils the patient has no more attacks of quinsy, and is not subject to ordinary tonsillitis.

In other cases, if examined during the summer months, we find only moderately enlarged tonsils, without other evidence of disease. As winter approaches, these tonsils become inflamed and remain so during the entire winter, sometimes better, sometimes worse. Local treatment only relieves these cases; does not cure them. After the removal of these tonsils the patient has no further trouble during the winter months.

In still another class of cases we find the remnant of tonsils that have been shrunk by caustics, in which we find a stump left. This stump is often a source of a great amount of annoyance. It is usually red and inflamed, with rough and irregular surface. These patients have some diseases of the tonsil most of the time. Upon the least exposure, inflammation sets up. In singers, they are a great source of annoyance, the voice never being clear and free. The caustics used only destroying a portion of the follicles, causes a contraction or closure of the orifices of the remaining portion of the follicles. The accumulation of the secretions within them not finding ready exit, undergoes calcareous degeneration and causes inflammation, and suppuration, The only relief is in the removal of all the stump and cicatricial tissue. If any is allowed to remain, disturbance is liable to occur. Doctor Wright has made a number of cultures from the contents of the crypts of the tonsils, and when they were at all enlarged, he found there constantly the staphylococcus aureus or albus. The contents of the crypts of normal tonsils did not reveal the presence of any microorganisms.

In the normal condition of the fauces, the pillars are nearly parallel with each other, the space between them being an inverted trough; this space, with the more or less tense or relaxed condition of the pillars during vocalization, has a great deal to do with the formation of certain vocal sounds. When this inverted trough is filled up with an enlarged tonsil, the pillars are held apart in their middle by this large mass of unyielding substance, interfering with their tension. The space between them can no longer act as a resonant chamber. In this condition the voice is lower or muffled in singing or speaking. The higher register and full capacity of the voice cannot be reached till after the removal of the enlarged tonsil.

A great many vocal singing teachers, who ought to know better, claim that the removal of the tonsils injures the voice; this cannot be so, as the removal of these obstructing masses simply brings back the vocal apparatus to its normal condition. Every laryngologist knows that the voice is improved by the removal of enlarged tonsils. Cases are reported in which impairment of the voice has followed a bunglesome operation of cutting out the tonsils, but it did not arise from the removal of the tonsil, but from injuring and cutting the pillars or surrounding parts. If the pillars are cut there may be a permanent injury to the voice. An accident occurring at the hands of a bungling operator should not condemn necessary operation when performed by a skillful surgeon.

Lenox Browne and Emil Behnke, in their excellent work on "Voice, Song and Speech," the first an eminent laryngologist, the second well known as a vocal teacher, in speaking of the ill effects of enlarged tonsils in addition to their bad effect on respiration, hearing, smell and taste, says that "the voice becomes more or less husky, toneless and easily fatigued. Sometimes it is thick and guttural, and power of modification is always rendered difficult." Again, they say: "Unfortunately there is a prejudice, very illy founded and unsupported by any authority, against the radical cure by removal of enlarged tonsils by the guillotine, but in fact it is the least painful (it might be said that it is almost painless), quickest, and safest and in every respect the most effectual. There is no argument whatever of any scientific value to be advanced against the measure, and there is the very direct evidence in its favor of many of our great singers. Louisa Pyne, Patti, Lucca (Kellogg) and others have undergone the operation, not only without injury, but with actual benefits. Our observations are in entire accord with those of Mandl, "that while all applications of caustics, so frequently employed, are harmful rather than serviceable, excision of enlarged tonsils is the most sure means of cure, and is followed by no inconvenience to the voice, but is, on the contrary, always beneficial to it. One need not, therefore, give heed to the opposition to this operation which comes from those competent to give an opinion on the question, and is, to say the least of it, very doubtful."

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FURTHER STUDIES OF THE INTRACELLULAR BACTERIAL TOXINS.*

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FOR the past eight years much of my time, so far as it could be given to research work, has been devoted to a study of the intracellular toxins of bacteria, and the purpose of this paper is to briefly state what I have accomplished along this line, and to formulate the theoretical conceptions that have grown out of this investigation. In this work I have been aided by several most competent assistants and students, all of whom have labored without any remuneration worthy of mention, except that which comes to everyone who engages in scientific research intelligently and conscientiously. In 1896 Perkins and I[1] reported the presence in a toxicogenic bacterium found in poisonous ice cream of an active body that proved to be soluble in alcohol, and in this respect at least, as we shall see later, similar to the toxins which we have recently been studying.

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*Read before the American Medical Association at the Atlantic City meeting, June, 1904.

[1] "Ein in Eiscreme und Käse gefundener giftproducirender Bacillus," *Archiv. f. Hygiene*, 1896, XXXIII, page 308.

In 1900, with McClymonds,[2] I was able to demonstrate that the colon germ, so frequently found in cheese, produces no soluble poison, but that the cell substance is markedly toxic. The bacterial cells were steamed and subsequently exposed for several days at thirty-seven degrees to artificial gastric juice without destruction of their toxic properties. In 1901, with the aid of Cooley and Gelston,[3] I was able to make substantial advances. The large tanks, so necessary in order to obtain bacterial cell substance in large amounts, were devised and put into operation. Without these the work since accomplished could not have been done, because the production of large amounts of bacterial cell substance free from constitutents of the culture medium and free from contamination was essential before the chemistry of the cell could be successfully investigated. In a paper before the Association of American Physicians in 1901 I was able to make the following statements concerning the toxin of the colon bacillus:

(1) The toxin is contained within the cell from which it does not, at least under ordinary conditions, diffuse into the culture medium.

(2) The toxin is not extracted from the cell by alcohol or ether.

(3) Very dilute alkalies do not extract the toxin from the unbroken cells.

(4) The unbroken germs may be heated to a high temperature with water without destruction of their toxin.

(5) Boiling with a two-tenths per cent aqueous solution of hydrochloric acid has but little, if any, effect on the germ cell or its contained toxin.

(6) Heating the germ substance for an hour at the temperature of the water-bath with water containing from one to five per cent hydrochloric acid breaks up the cell and lessens, but does not destroy, the toxicity of the cell content. Prolonged heating may render the toxin inert.

In the paper referred to I spoke several times of the bacterial cell wall, a structure which I am now satisfied has no existence.

In 1902 my students were able to make the following advances:

(*a*) Detweiler[4] showed that the cellular substance of micrococcus prodigiosus, bacillus violaceous, and sarcina aurantiaca and sarcina lutea contains poisonous bodies.

(*b*) Wheeler[5] demonstrated the presence in the cell substance of sarcina lutea of two carbohydrates, a nuclein body yielding xanthin bases (since obtained in crystalline form), and a proteid yielding hexon bases (also since obtained in crystals), thus showing that the cell is made up largely of a glyco-nucleo-proteid molecule.

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[2] "Bacteriologic Poisons in Milk," "Jacobi Festschrift," page 108.

[3] "The Bacterial Toxins," "Transactions of the Association of American Physicians, 1901"; "The Toxin of the Colon Bacillus," *The Journal of the American Medical Association*, February 23, 1901, and *American Medicine*, May, 1901.

[4] "The Toxicity of the Dry, Sterile Cells of Certain Nonpathogenic Bacteria," "Transactions of the Association of American Physicians, 1902."

[5] "The Chemistry of Sarcina Lutea," "Transactions of the Association of American Physicians, 1902."

(*c*) Leach[6] split up the colon bacillus, and proved that it also contains in its molecular structure carbohydrates, nuclein and proteid.

(*d*) Marshall and Gelston[7] determined with great accuracy the toxicity of the colon germ substance, and showed that with this immunity could be obtained, although it was neither marked nor permanent. The germ substance is, moreover, not a favorable agent to employ in inducing immunity on account of its insolubility.

(*e*) Gelston[8] found an intracellular toxin in the bacillus of diphtheria, and showed that commercial antitoxin gives no protection against the intracellular poison.

(*f*) J. Walter Vaughan[9] demonstrated, contrary to the findings of all other investigators along this line, that the anthrax bacillus does produce a poison, and that it is intracellular.

In 1903, Wheeler[10] made some investigations which, in my opinion, have thrown much light on the problem, inasmuch as they lead to the suggestion that the bacterial cell is essentially a chemical compound of definite and constant composition. It was found that when the cellular substance is extracted with dilute acids, the portion split off is practically the same whether one-tenth or one per cent acid be employed. Furthermore, it was demonstrated that the amido-nitrogen split off with acid is the same, whether one per cent, five per cent, or thirty-three and one-third per cent sulphuric acid be used.

Leach[11] obtained additional information along the same line by the action of mineral acids on the colon bacillus.

McIntyre[12] applied my methods to bacillus pyocyaneus, and demonstrated the existence of an intracellular poison in this organism.

Munson and Spencer[13] showed that the hepatic cells of vertebrates may be split up with the production of a poisonous group.

During the present year, Wheeler and I have been able, by acting on the germ substance with sodium alcoholate, to split off and obtain in soluble form highly poisonous groups. This has been accomplished with the colon, typhoid and anthrax bacilli, and with all of these we have produced antibodies which neutralize the toxin, but so far we cannot speak with certainty concerning their antibacterial action. The colon toxin immunizes guinea-pigs against both itself and the living germ, but with the other organisms experiments have not been carried far enough to justify a statement one way or the other. The colon toxin split off from the germ substance is still a complex body, and gives the biuret and Millon reaction. It is freely soluble in water and absolute alcohol and insoluble in ether, petroleum ether and chloroform. The alcoholic solution as obtained from the germ substance by the action of sodium alcoholate contains two bodies, or rather two groups of bodies, one of which is poisonous, while the other is not actively so, at least. The toxin is precipitated from alcoholic solution by platinum chloride, while the nontoxic body is left in solution. Of the mixture of the two obtained by evaporation of the alcohol in vacuo, eight milligrams is the minimum lethal dose for guinea-pigs weighing from three hundred to four hundred grams, but only fifteen per cent of this mixture is toxic. This makes the minimum lethal dose of the toxin between one and two milligrams; or one part to from 300,000 to 400,000 parts of body weight of guinea-pig. By administering gradually increased doses of this toxin, guinea-pigs are immunized, and when such immunized pigs receive two cubic centimeters of a twenty-four-hour culture of a virulent colon bacillus, they are but slightly affected, while controls invariably die within from ten to twenty-four hours.

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[6] "The Chemistry of Bacillus Coli Communis," "Transactions of the Association of American Physicians, 1902."

[7] "The Toxicity of Cellular Substance of the Colon Bacillus," "Transactions of the Association of American Physicians, 1902."

[8] "The Intracellular Toxin of the Diphtheria Bacillus," "Transactions of the Association of American Physicians, 1902."

[9] "The Anthrax Toxin," "Transactions of the Association of American Physicians, 1902."

[10] "The Action of Mineral Acid on the Cellular Substance of Bacillus Typhosus," *The Journal of the American Medical Association*, 1904, XLII, page 1000.

[11] "The Chemistry of Bacillus Coli Communis," *Ibid*, page 1003.

[12] "The Intracellular Toxin of Bacillus Pyocyaneus," *The Journal of the American Medical Association*, 1904, XLII, page 1073.

[13] "The Extraction of a Toxin from Liver Cells," *The Journal of the American Medical Association*, 1904, XLII, page 1075.

That this is the specific toxin of the colon bacillus it seems to me there can be no doubt, because it gives immunity in the guinea-pig at least, to both dead and living cultures of the germ. This toxin is, I believe, composed of a haptophore and a toxophore group. Concerning the nature of the former, I am not prepared as yet to express an opinion. There are certain reasons for suspecting that the toxophore group is a neurin. These reasons are both chemical and physiological. Neurin is a highly poisonous body that is not decomposed on being boiled with sodium alcoholate; so is the colon toxin. Neurin acts on the respiratory center and arrests the respiratory movements, while the heart continues to beat normally. This is especially marked with our toxins, those obtained from the colon, typhoid and anthrax bacilli; most marked with the last mentioned. When this poison is injected intravenously in doses of a fraction of a milligram, the respiratory movements cease immediately, while the heart continues to beat for five minutes or even longer. It will be understood that these are only suggestions that the toxophore group is a neurin body. They are by no means proofs, and I hold the right to change my opinion on this point after further investigation. As Behring has suggested, the toxophore group may be the same in a number of different pathogenic bateria.

When the dried colon germ substance is heated with sodium alcoholate, about one-third of the cellular substance goes into solution in the alcohol, while the rest of it remains out of solution. All the toxin is dissolved in the alcohol, provided the extraction be repeated three or four times, but, as has been stated, of the one-third of the germ substance that goes into solution in the alcohol, only about fifteen per cent is toxin.

The part of the cell substance insoluble in alcohol is soluble in water, wholly on addition of traces of acid, and while nonpoisonous, it is scarcely less interesting than the toxic part. The aqueous solution contains a hemolysin and a group that splits up the hemoglobin into hematin and a globulin. The hemolysin is precipitated from the aqueous solution by the addition of acid and the application of heat. It is thermo-stable and can be heated to one hundred ten degrees without appreciable loss of its hemolytic properties. This promises to give us a rare opportunity of finding out something more definite than is known up to the present time concerning the nature of hemolysins. I may say that traces of hemolysin have been previously found in colon cultures, and have been studied by Kayser,[14] who also found it to be thermostable. This hemolysin is not active at low temperatures, and requires an incubation period before it manifests its effects. So far as I know, this is the first time that it has been demonstrated that a hemolysin can be obtained by splitting up the bacterial cell with chemical agents. It will probably be found that bacterial hemolysins are chemical groups in the bacterial molecule, and that those found in solution in culture media result from the normal disintegration of the bacterial molecule, which is always taking place with more or less rapidity. I know of no previous observation of the group that splits up the hemoglobin molecule with the formation of hematin. This body is now being investigated by Cooley in my laboratory, and a report of the work will be made later.

Uniformly the bacterial toxins, so far as we have studied them, lower the temperature of guinea-pigs. This is true of both fatal and nonfatal doses. If the cellular substance of the colon bacillus be thrown into the abdominal cavity of a guinea-pig, the temperature begins to fall within two hours, and continues to do so as long as the animal lives, provided the dose is a fatal one. If at any time the temperature ceases to fall and begins to rise, even after it has fallen below 95° Fahrenheit, the recovery of the animal can be safely predicted. When the split-off toxin is injected the fall begins in a few minutes and continues to do so if the animal dies. In case of recovery, the moment of change for the better is indicated by the beginning of a rise of temperature. This matter also, as well as the destruction of the bacillus in the peritoneal cavity of immunized animals, is being studied in detail by V. C. Vaughan, Junior, and we hope to give more accurate information concerning the relation of the infectious diseases to temperature.

When the sterile germ substance of the colon bacillus is thrown into the abdominal cavity of a guinea-pig, a hemorrhagic peritonitis results. When the split-off toxin is used in the same way death results, provided the dose is large enough, in a few minutes, and there is no evidence of irritation of the peritoneum. When the dose is not fatal, recovery from the split-off toxin is apparently complete within two or three hours. When the soluble toxin is injected intravenously, death occurs within from five to twenty minutes, or with very minute doses there is no apparent effect.

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[14] "Ueber Bakterienhämolysine, in Besonderen das Colilysin," *Zeitschrift f. Hygiene,* 1903, XL, page 118.

CONCLUSIONS.

The investigations which I have hastily outlined have led me to the following conclusions:

(1) The colon bacillus in its essential part is a chemical compound as truly as sodium sulphate or phenylhydrazin.

I have been convinced of this by the following facts, ascertained in our investigations:

(*a*) When treated with dilute mineral acids, the body split off from the germ substance is uniform, both qualitatively and quantitatively, whether the acid employed be one-tenth per cent or one per cent.

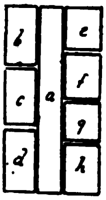
(*b*) The amount of amido-nitrogen split off is the same, whether one per cent, five per cent, or thirty-three and one-third per cent sulphuric acid be used. These findings indicate that the germ substance has a definite chemical composition, and that cleavage occurs along a definite line under the influence of the acid. That the toxic, hemolytic, hemoglobin splitting, carbohydrate, and other groups are chemcially combined in the cell, is indicated by the fact that they are not extracted by agents acting physically as solvents, but are separated only by those agents that split up molecules.

(2) The colon bacillus is a chemical compound, in whose molecule we have demonstrated the existence of the following groups: Nuclein, amido, diamido, monoamido, carbohydrate, toxic, hemolytic, and hemoglobin splitting. Graphically, we may represent the colon molecule as in Figure 1.

There may be, and probably are, many other groups; then, each of these may, and probably does, contain subgroups. Besides, these groups are attached to one another to form a highly complex molecule, and the lines along which the molecule splits up depend on the kind and the amount of the energy applied. The force with which these groups are held in the molecular whole varies in strength, consequently some groups are easily split off, while others are separated only under the influence of relatively powerful agents. The toxic group in the molecule of some pathogenic bacteria drops off in the presence of moisture and at a temperature of 37° centigrade. This is true of those germs, such as the bacilli of tetanus and diphtheria, that are said to form soluble toxins. Many germs also have hemolytic groups, which become detached from the molecule under similar conditions. Some of the groups in the bacterial molecule are essential to the vitality of the cell. Such I suppose to be the case with the nuclein group, while others are not essential. The latter is probably true of the toxic group in certain bacteria, and this explains the fact that most pathogenic bacteria can be attenuated by growth in certain media, or under certain unusual conditions of temperature.

(3) Every cell in the animal body contains complex molecules similar to those of the bacillus. As has been stated, my students, Munson and Spencer, have shown that a poison can be split off from the liver cell by the action of dilute mineral acids, and next year I hope to study the action of sodium alcoholate on these and other cells of the animal body.

(4) The reaction of the colon molecule and a body molecule or cell is chemical, just as much so as that between sulphuric acid and calcium carbonate. When these two molecules are brought within the range of chemical attraction, if the chemism between a group in the one and a group in the other is greater than that which holds these groups in their respective molecules, a reaction takes place. Each group is split off from its molecular combination, and the two combine to form a new molecule; and the injury done the bacillus or the cell depends on the group that has been abstracted. No bacillus molecule can do the body cell harm unless such a reaction takes place. It also follows that a toxin split off from a bacterial molecule and injected in the free state into an animal does harm, or breaks down the body molecules more promptly than when the unbroken bacillus is introduced, as sodium chlorid is not a poison, but if it be broken up into its constituent base and acid, either of these, when introduced into the body, destroys the first cells with which it comes in contact. This is, I think, nicely illustrated with our colon toxin. The living culture or the dead germ substance, when placed in the abdominal cavity of a guinea-pig, requires from ten to twenty-four hours to kill, because the colon molecule must be split up before the toxic group becomes active, but when the free toxic group is employed, it may kill within as many minutes, because it is ready to combine with groups in the cell instantly on coming within range of their chemism. Moreover, when the free toxin or toxic group is thrown into the abdominal cavity, it requires a longer time to kill than when injected intravenously because, in either case, it reacts with the cells with which it first comes in contact, and with which it is capable of combining. When injected intravenously, some part of the free toxic group comes in contact with the cells of the respiratory center, and death, or at least arrest of the respiratory movements, is almost instantaneous.



a = Nuclein group.
b = Amido group.
c = Diamido group.
d = Monoamido group.
e = Toxic group.
f = Hemolytic group.
g = Hemoglobin splitting group.
h = Carbohydrate group.

FIGURE I.—

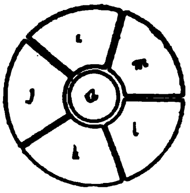


FIGURE II.—Body cell.

(5) If this conception of the reaction between bacillus and cell be

true, the formation of antitoxins is capable of an explanation, which seems to me simpler than any yet proposed. This may be illustrated by the accompanying figures.

Suppose that the chemical attraction between group "e" in the bacillus molecule, and group "m" in the cell molecule, is greater than that which holds these groups in their respective molecules, then these groups will be broken away from their molecules and unite to form a new molecule, which, being saturated and stable, is not harmful. The injury done to the cell will depend on the importance that group "m" bears to the functioning power of the cell, and the injury done to the animal depends on the number of cells whose physiologic function is thus interrupted. I take it that a true toxin—understanding this term to apply only to those agents which are capable of producing antibodies in the animal organism—does not completely destroy cells. It injures animal cells, but leaves them in such a condition that they can repair themselves. Indeed, it seems to me that no other explanation is, at present at least, possible, because the formation of the antibody is dependent on this process of repair, and an agent that destroys the body cells of the animal is a poison, but not a toxin. It is not only possible, but probable, at the present time, that at least one pathogenic organism, the tubercle bacillus, produces a poison which is not a toxin. In the case of the toxins which I have been studying, I would explain their lethal effects on the animal as follows: The toxic group of the cell has a special chemical affinity for a certain group of the body cells that control respiration. It does not destroy these cells, but throws a certain number of them out of commission, so to speak, and if this number be great enough, respiration ceases and the animal dies. However, careful tracing of the respiratory movements, before one commits himself positively to this theory, will be necessary. I cannot resist the temptation of suggesting the possibility that a cell toxin leaves the nuclein group of the cell intact, while the cell poison breaks up this group, and consequently permanently destroys the cell and renders the formation of an antibody impossible.

When the toxin is introduced into the body the injured cell, by virtue of its chemical attraction, repairs its loss by splitting off from the nutritive substances within the range of its chemism. groups of "m," and in doing this it splits off more "m's" than it can use, and the excess becomes the antitoxin of the blood serum. With this explanation it is easily understood why the number of antitoxins that may be formed is practically unlimited in number and why each is specific. As group "e" in no two kinds of bacterial cells is identical, the group split off from the body cell will not be identical.

In concluding, I wish to express my high appreciation of Ehrlich's theory. In my opinion it is the most valuable theory ever presented to scientific medicine, and deserves to be ranked with the theory of gravitation and with that of ether, and I think that it is not too much to say that its author has done more to stimulate scientific research than any other man in the profession, and it is with much hesitation that I have suggested the modification of Ehrlich's theory set forth in this paper. The ideas which I have expressed have grown out of a study of Ehrlich's theory, and if there be in these ideas anything of a permanent value, I hope that they may be considered a tribute to his genius. While on the other hand, if my suggestions prove to be without value, they cannot, in any way, detract from the honor due him whom all workers in this line regard as the master.

A REPORT OF TWO CASES OF TUMOR IN THE DIGESTIVE TRACT.*

By JOHN A. WESSINGER, M. D., Ann Arbor, Michigan.

Case I.—Mr. W., a German, aged forty-seven years. His father died in Germany, probably of tubercular joint disease. His mother is still living.

I first saw this patient March 17, 1903, at 2 P. M. His pulse was 100 and his temperature registered 99.5°. He coughed considerably, and there was dullness in his right apex. The supraclavicular glands on the left side were very large. Great pain was experienced under midsternum on swallowing, and food regurgitated unchanged. One year ago patient weighed one hundred eighty pounds but his present weight is only one hundred thirty, showing a loss of fifty pounds. It was impossible to pass a stomach tube below the middle of the sternum, from which point the tube brought up bloody mucus and tissue debris. Examination of bits of tissue under the microscope revealed the presence of blood cells; epithelium, fibrinous strings, and nests of small round cells. Patient appeared markedly cachectic.

I saw him again on April 1, 1903, at which time his pulse was 106 and his temperature 99°. His bowels were now moving more regularly, having been previously constipated. The patient has had very little vomiting recently, and thinks a little food now enters the stomach. At the time of my first visit, March 17, I gave him, in a tentative way, fifteen minims each of tincture of nux vomica and tincture of belladonna, three times a day in a little water. This medicament evidently entered the stomach, and the well-known action of the latter drug would explain his ability to swallow, temporarily, at least, small quantities of liquid food. Physical signs did not indicate gastric dilatation, and history of traumatism was negative. Patient had used alcoholic beverages moderately.

Diagnosis.—Probable carcinoma of the esophagus.

Prognosis.—Hopeless.

I did not see him again, as he died April 20, 1903. No autopsy was permitted.

This patient began complaining one year before I first saw him, but during the interval he was continuously under treatment for dyspepsia in a neighboring city.

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* Read before the Ann Arbor Medical Club, June 29, 1904.

Case II.—Mrs. W., a German, aged forty-eight years, sister-in-law to Case I, and mother of six children, the youngest five years old. Her trouble began in the stomach three years ago, and she has been under treatment in a neighboring village most of the time since. Eight years ago I did a cervix amputation for a sister of this patient, for a probable malignant growth of the os. There has been no recurrence of the disease. About six months ago patient first noticed a lump in her left side. For some time previous to this she had been troubled with frequent nausea and vomiting and failing appetite. During the past year she has lost fifteen pounds in weight, and fifty pounds within the past four years. She now weighs one hundred thirty pounds.

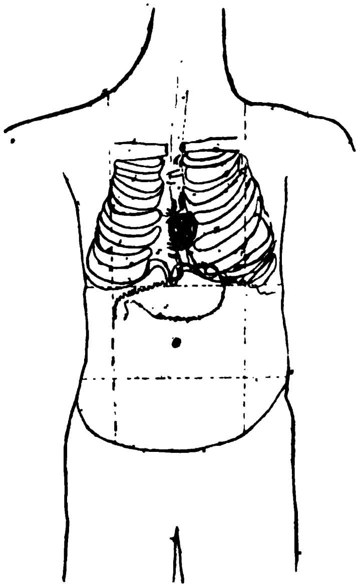

FIGURE I.—CASE I.

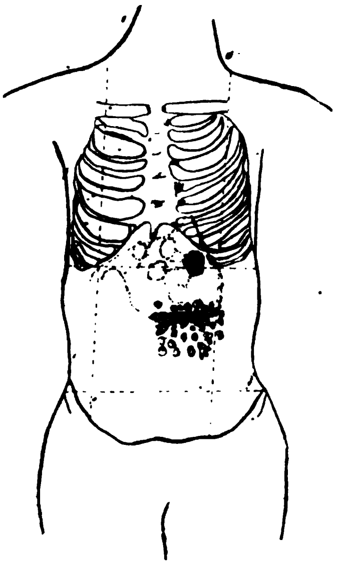

FIGURE II.—CASE II.

I first saw this woman on May 15, 1904. She presented a slight cachexia, but appeared quite well nourished, although she had frequent nausea and vomiting, with little desire for food. She complained of some distress in the stomach. Palpation revealed a growth in the left epigastrium as large as a goose egg, which was firm, nodular, devoid of pain, and freely movable in almost every direction, as the accompanying illustration will indicate. The liver and spleen were normal, but about two inches below the umbilicus the fingers met a firm, resistant, although freely movable mass, extending from this point horizontally about four or five inches to the left and one and one-half inches wide. Stomach tympany extended downward to and into this mass. There was marked diastasis of the recti muscles, to the extent that the fist could easily be buried between them and pushed down to the spine. Gastric dilatation and ptosis and enteroptosis were both well marked. On May 22, 1904, one hour after an Ewald test breakfast, I procured about two hundred fifty cubic centimeters of stomach contents of a light-green color, with which the following reactions were obtained: A test made with Congo red indicated the presence of acid; the amidobenzol test indicated the presence of free hydrochloric acid; the Uffelmann test indicated the presence of lactic acid—about one per cent; liquor iodin and kali iodid gave the characteristic blue starch reaction.

On January 4, patient's condition seemed improved and she reported herself as feeling better. The bowels, which were previously constipated, were then moving more regularly, still she vomited almost every day.

On June 20, patient vomited about four hundred cubic centimeters of a dark-brown, grumous fluid. She seemed improved in appearance and could retain food better than formerly, but the tumor remained the same as when I first saw her.

The following questions have presented themselves for solution since I began the study of this case. Premising that the stomach is dilated,—

Is this growth extra- or intragastric?

Is it attached to the pylorus, or to the fundus?

What is the indurated, elongated mass stretched across the left half of the abdomen below the umbilicus?

Shall this patient be brought to operation?

It might be interesting to note that both growths moved synchronously with respiration. The treatment has been restricted to fifteen minims of the tincture of nux vomica with fifteen minims of the tincture of belladonna three times a day, with a diet of starchy food and vegetables, meat being excluded as far as possible.*

* * *

In the discussion of these cases Doctor Dock called attention to the very interesting nature of growths in and about the stomach, and insisted on a careful study of all such tumors for the purpose of determining early the advisability of operation, when possible. The doctor also called attention to the horizontal growth at the base of the stomach in Case II as being possibly omental, or pancreatic, although probably located in the body of the stomach. Doctor Cowie, in continuing the discussion, concurred in all these views, and strongly advised early operation in such cases. In his opinion the movable tumor in the left epigastrium of Case II might be polypoid with a long pedicle.

* * *

Case II entered the medical ward of the University hospital, where she was subjected to a most thorough examination, held under observation for some time, and eventually recommended for exploratory operation, but later it was thought best to defer operative treatment for awhile. The tuberculin test gave negative results and the patient was finally declared inoperable.

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* See Osler's lectures on the "Diagnosis of Abdominal Tumors," *New York Medical Journal*, Volume LIX.

SOME RECTAL DISEASES AND THEIR TREATMENT.*

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THESE are days of great achievements in surgery, when minor operations are disregarded or forgotten and slight ailments receive but a passing notice from the physician, while the man with enlarged prostate and the woman with an abdominal tumor are given all of the benefits of medical science even to the removal of the offending parts.

The subject of this paper was suggested by the number of patients coming to the University Hospital with rectal trouble, sent by the family physician, some with a partial diagnosis, others without even an examination, hemorrhoids being the general term applied to all conditions regardless of what ailment might be found. Many others turn from the channel of regular medicine to the endless stream that flows to the quack and charlatan, lining their pockets with gold without value received by the patients. Now that the profession is organized for work as never before, the general practitioner must carefully guard all work that naturally belongs to him even to the extent of giving special attention to rectal diseases as most of the operations associated with the same belong to him. He may say, however, that he has no time for special work.

The relations, nerve supply, et cetera, of the anus and rectum can be found in any work on general anatomy, but the recognition of diseased conditions must be acquired by careful observation. The sphincter muscle may be described as arising from the coccyx and adjacent tissues and terminating in the perineal body as two layers—the superficial composed of circular fibres, and the deep, which are parallel, but a hypertrophied sphincter, the result of continued irritatation, or a relaxed sphincter the result of age or disease, must be seen and felt before one can assert that he has a working knowlegdge of this muscle. A thorough examination is the keynote of success in rectal diseases; and to do this, the physician must have a correct position, good light, a few instruments and with all a gentle touch. After obtaining a full history, the patient may be put on the examining table on the left side with the knees drawn up. Carefully separating the buttocks, he inspects the exposed parts and notes the condition of the skin—whether it is smooth and regular or lies in radiating folds, moist or dry, soft or hard. He searches most carefully for any slight elevation or any small opening from which a drop of moisture or pus may come—indicating the presence of a fistula, any tag or projecting point of skin—the landmark of a disappearing hemorrohid. Separating the buttocks to the utmost without forcing the sphincter muscle, he sees the loops of the external hemorrhoidal veins; if a tag is present he tries to look over the anal margin at this point to discover a crack or fissure. He now uses the examining finger protected by a rubber finger cot or well covered with carbolated vaseline. Introducing it carefully through the sphincter with a boring motion, he tests the strength of the muscle and the amount of irritation produced. If the rectum contains fecal matter the examination must rest at this point until the bowel is emptied by a copious warm enema. He should advise the patient to strain and bring down any tissues that are inclined to pass the sphincter. He may resume the examination by moderate inspection and see ulcerating points or internal hemorrhoids, prolapse of the rectum, et cetera. A short Kelly or a Sims speculum may be introduced, carefully inspecting all of the surface that can be brought under observation for ulcers, fissures or dilated hemorrhoidal vessels.

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* Read before the SHIAWASSE COUNTY MEDICAL SOCIETY.

He can outline the valves of Houston and near to the anal margin will see the columns and crypts of Morgagni. He may use longer instruments and carry his investigation well into the sigmoid flexure of the colon. His inspection will give him a mental map of the whole area. The sphincter muscle may give important information. When examination produces spasm or twitching, trouble may be expected at the anal margin—as an irritable hemorrhoid or a fissure. A relaxed, lifeless condition probably means some genaral weakness, advanced age, chronic constipation, stricture or malignant disease of the rectum. The cause of anal irritation may not always be direct but may be some distance away—as stone in the bladder, urethral stricture, or seat worms. The objection or dislike of the body to certain articles of food may be manifested in this way.

As an example of the necessity for thorough examination I might mention one patient who had a continued diarrhea and suffered from what she called hemorrhoids. Insisting on an examination I found a large mass of feces filling the rectum, which required some effort and a large amount of sweet oil to remove. No hemorrhoids were discovered. Only a few days ago a patient sought treatment for hemorrhoids. He had consulted a physician, six weeks before, who gave him medicine but no examination. He then took treatment from a Pile Company for one month with no benefit. Not a hemorrhoid was found but a large cancerous growth two and one-half inches above the sphincter was easily discovered.

Any bulging or slight elevation of the external tissues within one or two inches of the anal margin should be carefully examined for fistula. Sometimes pressure on the point discovered will disclose a small drop of discharge, the opening will admit a very fine probe which can be carefully manipulated toward the rectum. A finger introduced will note a slight elevation or depression which marks the internal opening between the sphincters. Failing to find the opening, some colored fluid may be injected into the external opening, then expose the inner surface with a Sims speculum and note where it comes through.

Fistulæ fail to heal because of the constant action of the sphincter, lack of drainage, continued cough and imperfect repair due to tuberculosis or imperfect operation. Direct fistula may be removed by passing a probe along the tract into the bowel and dissecting away the tissue that surrounds it, cutting the fibres of the external sphincter muscle. Fistulæ may be opened and scraped, as good results are not usually obtained by bringing the parts together with sutures as by packing the wound with gauze and making it heal from the bottom.

While pruritus is always a symptom we are accustomed to call it a disease and treat it accordingly instead of giving attention to the disease which it represents. The causes in most cases lie outside the sphincter and it not infrequently is a symptom of some constitutional trouble. While giving attention to the cause local treatment may afford great relief. First, is stretching of the sphincter under general anesthesia which is nerve stretching; this will frequently give immediate and continued relief. When this is not advisable, applications containing carbolic or salicylic acid may be used to relieve the pain, not forgetting the rectal plug of Allingham.

External hemorrhoids are sometimes extremely painful during the period of formation. The best treatment is incision and removal of tension by lifting out the blood clot. The wound is protected until the inflammation subsides, then the hemorrhoid is removed.

A word about the use of anesthetics. A general anesthetic should always be employed in the severer operations on nervous patients, but much can be done under local anesthesia even in these sensitive parts. Schleich's infiltration method is not desirable because the tissues are dense and the necessary needle punctures cause pain. It is better to employ a solution of cocain of known strength—two to four per cent. Five to ten minims of this can be used with comparative safety when injected slowly through a very fine needle. A short fistula may be operated upon under local anesthesia but this method is particularly useful when operating upon external hemorrhoids and fissure. The needle is inserted at the base of the hemorrhoid or fissure, passed to one side and withdrawn to the skin, leaving two to five minims of the solution behind, the other side is treated in the same way and the patient is ready for operation in about five minutes. Local anesthesia has been employed for dilating the sphincter. I have never used it and would not be inclined to give it a trial unless there were good reason for not giving a general anesthetic. Dilating the sphincter as a method of treating fissure is popular and very efficient, but some prefer the slight incision of the fibres of the sphincter at the base of the fissure under local anesthesia. Owing to lack of sensation, operations above the sphincter cause little pain. I have seen sloughing of a large part of the rectal mucous membrane from using a hot enema, the patient administering it himself and feeling no burning. Intense irritation of the rectum may be caused by the improper administration of a turpentine enema. Mixed in a fountain syringe and allowed to stand for a few minutes the turpentine separates and falls with all its power of irritation upon a delicate mucous membrane.

Hemorrhages from the rectum, however slight, when of daily occurrence should receive prompt attention as they may cause anemia. Two extremely bad cases of this condition have come under my observation wherein the hemoglobin was reduced to thirty per cent. By careful treatment and nursing the blood was restored to a point where operation was safe and the bleeding vessels were secured. Both of these cases made a rapid recovery. There is danger that the removal of hemorrhoids may sometimes be overdone. The operation should be so planned and executed that the offending tissue may be removed with the least possible damage to the skin and mucous membrane. External hemorrhoids should be treated by an eliptical incision pointing toward the anus, removing a wedge-shaped piece of tissue together with the included vein, and the wound closed by two or three stitches. Some object to stitches because of the danger of infection around them, and although the wound is slow to heal, repair will take place without them. The whole pile-forming area may be removed by a circular incision at the junction of the skin and mucous membrane. The external sphincter muscle is exposed and all of the tissue is dissected away with the mucous membrane until the internal sphincter is reached. The bleeding vessels are closed by torsion and after cutting away the dissected circular strip the mucous membrane is sutured to the skin.

The serious objections raised to this operation are, damage to nerves, and bad scarring which amounts to stricture in some cases. There are a number of good operations for internal hemorrhoids but the simplest and safest is the ligature. It also has the advantage of requiring few and simple instruments.

Local applications to these parts should be made with caution. A strong solution of nitrate of silver to ulcers may cause considerable pain unless the application is carefully localized. I have seen severe iodoform poisoning from a piece of iodoform gauze placed in a fistula recently operated upon. Ichthyol should be diluted to fifteen per cent if it is to be frequently applied.

I might continue my subject indefinitely but trust that enough has been said to arouse the interest of the general practitioner in this line of work.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., D. Sc., Ann Arbor, Michigan.
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AND
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FIRST ASSISTANT IN MEDICINE IN THE UNIVERSITY OF MICHIGAN.

EXPERIMENTS WITH TUBERCULIN MADE FROM HUMAN AND BOVINE TUBERCLE BACILLI.

Wolbach and Ernst (*Journal of Medical Research*, October, 1904) have devoted themselves for some months to repeating the original experiments of Koch with tuberculin upon tuberculous guinea-pigs and also to testing the specificity of tuberculins made from human and bovine tubercle bacilli.

The repetition of these experiments was justified by the fact that the therapeutic effect of tuberculin upon tuberculous guinea-pigs is by no means decided, as the reports of many writers are absolutely contradictory to the conclusions reached by Koch.

The authors divided their work into three parts. (1) Determining the relative virulence of the human and bovine cultures used; (2) Determining the relative value of the tuberculins made from these cultures; (3) The treatment of tuberculous guinea-pigs.

The results, it would appear, show that the bovine cultures are more virulent than the human. That so far as their experiments go the only conclusion they can reach with regard to the second consideration was that both tuberculins were of greater strength than that demonstrated by Koch. Twenty-seven guinea-pigs were employed for this experiment. In the treatment-experiments it was found that the local effect of the tuberculins upon the inoculation abscess is the most marked action. This was shown by more rapid and complete evacuation of the abscess contents than with the control animals. After evacuation of the abscess contents the ulcer left rarely increased in size in the pigs that had received the tuberculin injections and in a number of instances decreased in size and in a few instances completely healed. With the untreated pigs there was a steady increase in the size of the ulcers.

The authors further conclude that the tuberculin treatment on the whole acts favorably upon tuberculous guinea-pigs and that there are no essential differences in the disease process caused by the human and the bovine tubercle bacillus. D. M. C.

SURGERY.

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AND
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LECTURER ON SURGERY AND DEMONSTRATOR OF SURGERY IN THE UNIVERSITY OF MICHIGAN.

REPAIR OF THE URETHRA BY TRANSPLANTATION OF THE URETHRA OF ANIMALS.

J. Hogarth Pringle, of Glasgow, mentions (*Annals of Surgery*, September, 1904) some experiments which have demonstrated not only the possibility but the value of this operation. He cites three cases in which it has been performed.

A man, fifty-one years of age, received a severe injury which destroyed a large portion of the urethra. Two weeks later the ends of the urethra were exposed and a portion of the urethra of a young bullock, which had just been killed, was obtained at the slaughter-house and conveyed to the hospital in hot sterile salt solution. A section of this, thirteen centimeters long, was inserted to supply the deficiency in the man's urethra. The wound healed, except at the junction of the penile urethra, where a portion failed to unite. This was repaired a number of times, finally with success.

A man, twenty-eight years of age, had five centimeters of the urethra of a young bullock engrafted in the same way, to supply a portion lost by injury, and the wound healed perfectly except at a point just behind the scrotum. Patient died a month later from infection of the kidney.

A case of hypospadias, in a boy fourteen years of age, where nine centimeters of new urethra were introduced and sutured in place, the graft living and doing good service.

One notices particularly the fact that primary union takes place, and although a second operation was found necessary in two of these cases, the results were good. The second operation, as in the last case, is not at all uncommon, for we frequently find a case of hypospadias requiring several operations before a cure is effected.

The main advantage in this operation is that the canal is already formed, or made, and, while the acid urine passes over the mucous membrane, which heretofore has been accustomed to alkaline, it seems to withstand the effect. The results so far obtained should lead to a wider study and use of the method.

THE TREATMENT OF MUCOUS MEMBRANE COLITIS BY COLOSTOMY.

John M. Elder, M. D., of Montreal, begins an article on this subject (*New York and Philadelphia Medical Journal,* September 10, 1904) with the history of a case of long standing that did not yield to medical treatment. The patient was a male, twenty-two years old. The trouble began seven years ago, continuing to the time of operation, May 3, 1902, with only occasional slight relief. A right-sided colostomy was performed, first removing the appendix. The cecum was sutured to the abdominal wall and opened eleven days later. The patient was given a varied diet and the colon was kept at rest for nearly six weeks, when the fistula was closed. The stool began again with little blood or mucus and soon became regular in form and appearance. There was not the slightest return of the trouble during the time he remained under observation, which was five months. Irrigations were not used, as they would interfere with complete rest. In 1895 Hale White recommended colostomy for mucous colitis. Kieth then wrote a letter saying that he had performed the operation one year before. Since then a number of successful cases have been reported. Different methods of operation have been advised and employed, among them Wier's method of using the appendix for the cecal opening. The opening in the appendix will usually close spontaneously or by simple cauterization. This method can be employed only in those cases wherein the appendix is free. The mortality of the operation is small, the improvement or cure quite certain, and the inconvenience of dressing during the period the only serious drawback.

GYNECOLOGY.

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.
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AND
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POSTOPERTIVE INTESTINAL PARESIS.

The first article by Craig upon postoperative intestinal paresis appeared in the *American Journal of Obstetrics* in April, 1904, and was a preliminary report of his work on the prevention of this complication. The second article appeared in the September issue of the same journal. To avoid this complication the author uses eserine salicylate in full doses. The best results are obtained by giving the eserine early. Its depressing action on the central nervous system inhibits the impulses sent to the intestine by way of the splanchnics as a reflex result of peripheral irritation. At the same time the stimulating effect on the musculature of the intestine or the nerve terminations in the musculature, prevents paresis. Eserine salicylate, one-thirtieth of a grain, is given hypodermically early in the operation. The author finds no more paresis after laparotomies than after plastic operations if this drug is given. The bowels move freely and easily in from twelve to forty-eight hours after the return of the patient to bed. There is an entire absence of abdominal distension.

In his paper, the author gives the preparation of the patient and mentions some precautions to be observed in using the drug.

A GIGANTIC OVARIAN CYST.

P. Zacharias has collected fourteen of these immense tumors from the literature and describes one observed by himself (*Munchener Medicinische Wochenschrift*). The abdomen measured one hundred ten centimeters from symphysis to xiphoid and one hundred eighty-seven centimeters in circumference. The patient weighed two hundred sixty-four pounds before operation and one hundred twenty-five pounds after the evacuation of the cyst. The tumor weighed one hundred thirty-nine pounds.

Extirpation should always be done in these cases if possible. If this cannot be done puncture should be resorted to. The fluid accumulates rapidly after puncture so that the operation must be performed repeatedly. The patient can be kept alive for years by this means.

A CASE OF EPITHELIOMA OF THE VULVA..

Reed reports this case (*American Journal of Obstetrics,* September, 1904) from the gynecologic clinic of the University of Michigan Hospital. The patient was fifty-three years old. The disease was first noticed in June, 1903, six months before her entrance to the hospital. An itching and burning sensation on the inner side of the right labium minus first called her attention to the disease. In October, 1903, an abrasion appeared, and shortly after this a tumor was noticed, which soon reached the size of a hickory nut. This was not painful, but was sensitive on pressure. The growth gradually increased in size until it involved the upper portion of the labium and the clitoris. The growth became ulcerated and was covered with poor granulations and a purulent discharge. The inguinal glands on the right side were enlarged perceptibly and were but slightly enlarged on the left. The patient was operated upon December 15, 1903, the inguinal glands being dissected out and the whole vulva removed.

Reed describes the technique of the operation and gives the results of the pathological examination of the tissues removed. The article is accompanied by photographs of the patient showing the tumor before operation and the extent of the cicatrix after operation. The diagnosis and treatment of this condition are discussed.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., Detroit, Michigan.
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ATTENDING THE LORENZ ORTHOPEDIC CLINIC IN VIENNA.

ENURESIS.

O. Reinach publishes two interesting cases (*Jahrbuch für Kinderheilkunde,* Volume VIII, and *Revue des Maladies dė L'Enfante,* Volume XXII) both of which were manifestly hysterical and daughters of hysterical mothers, one a girl aged two years, who was affected with polyuria consequent on a terrifying dream. She micturated twenty-five to thirty times in the twenty-four hours and as often in the day as at night and had no power of resisting the desire. This lasted for two months and was then cured by one application of painful Faradism. The other case was a girl, agen ten years, who was similarly cured.

PNEUMOTHORAX.

Boivard (*Archives of Pediatrics,* November, 1903) gives a table of eighteen cases, including five cases of his own, the ages varying from six months to twelve years. Of these only four recovered.

Of the fourteen cases which ended fatally, the causes were measles and its complications in four cases, diphtheria and its complications in four, and one each was due to miliary tuberculosis, tuberculosis and emphysema, pertussis, pneumonia, empyema, and abscess of the lung. The causes of the pneumothorax in those that recovered were trauma, pertussis, pneumonia, and pneumonia and pluerisy. The disease is most liable to occur in measles, diphtheria and whooping-cough; the diseases in which there is liability to bronchitis, broncho-pneumonia and bronchiectasis.

THE TREATMENT OF ANEMIA IN CHILDREN BY IRON-VITELLIN.

George Carpenter, M. D., says (*British Journal of Diseases of Children*, August, 1904) a question of practical importance to the clinician is the comparative values of organic and inorganic iron as reconstructives of hemoglobin and red blood-cells in conditions associated with anemia in children. Physicians rely almost entirely upon inorganic iron preparations while the chemists and pharmacologists assert that all of the arguments are in favor of organic iron, but when one reviews the results of the authoritative experimental and clinical researches on the subject of iron medication, it is clearly apparent that the desiderata of a satisfactory iron for clinical use are composed of the following.

(1) It must be organic in form.

(2) It must be unchangeable by hydrochloric acid of the gastric juice.

(3) Its chemical effects (on proportion of hemoglobin, red corpuscles and on the subjection symptoms of anemia) must be appreciable.

The author has experimented with iron-vitellin in hospital and private practice and believes it is destined to occupy a wide field of usefulness as a tonic for children, and he says the beneficial results obtained in cases of secondary anemias of childhood were remarkable. He draws the following conclusions: It produces prompt increase in the red corpuscles and hemoglobin; it improves the appetite, and does not produce constipation or disturb digestion; it is acceptable to the palate, and has a beneficial influence upon nutrition which I have never observed in the use of any other form of iron.

CARE OF PREMATURE INFANTS.

Blair insists (*American Journal of Obstetrics and Gynecology*, June, 1904, page 771) on the importance of attention to minutiæ and that all premature infants should be treated on the same lines as the most delicate ones. The child should be kept in an incubator unwashed but smeared with oil, care being taken of the temperature and moisture of air of incubator. For resuscitation of the most delicate he recommends suspension head downwards, alternate compression and expansion of the chest, alternate hot and cold douching. The signs of want of artificial heat are crying, becoming blue and fall of temperature. The cessation of crying is usually a bad sign, death ensuing in a few hours if nothing is done. Quiet sleep and crimson color are indications of well-being. Restlessness and rise of temperature show that the heat is too great. Food should be breast milk and the author prefers breast milk of a woman with a child of one to three months old diluted at first. It should be given slowly through a medicine dropper. Great care should be exercised in the handling as little as possible of premature infants.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.
ASSISTANT TO THE CHAIR OF LARYNGOLOGY IN THE DETROIT COLLEGE OF MEDICINE

MALIGNANT GROWTHS OF THE UPPER AIR PASSAGES.

In the August number of the *Laryngoscope* there is a symposium on malignant growths. While in general practice cancer of the upper air passages is not a common affection, still it occurs frequently enough to warrant all practitioners being on the lookout for this distressing and fatal malady. It is generally acknowledged that malignant tumors commence as local affections, that their course is progressively towards a fatal termination, and that if any successful treatment is to be attempted it must be done early in the course of the disease. The consensus of opinion is that early and complete removal of the growth is the only treatment that can hope for success. It is true that recurrences are frequent even after a thorough operation, but the reported results are encouraging. The keynote of successful management of malignant tumors is in early diagnosis and operation.

Doctor Cobb considers the "Malignant Growths of the Nose and Nasal Pharynx." Sarcomata are the most frequent. The endotheliomata form a second and comparatively rare class. The carcinomata, although more frequent than the endotheliomata, are nevertheless far less so than the sarcomata. The writer believes that the theory of benignant growths degenerating into malignant ones is not proven. The diagnosis may be divided into three classes:

(1) Diagnosis between malignant and benignant.
(2) Diagnosis between different forms of malignant disease.
(3) Diagnosis of malignant from tubercular and syphilitic lesions.

"Malignant Growths of the Mouth and Pharynx" is next taken up by Doctor Goldstein. He lays stress on the importance of early diagnosis, and considers malignant disease affecting the tongue, faucial tonsils, uvula, soft palate and lingual tonsils.

Doctor Kyle discusses briefly the "Pathology of Malignant Growths." He believes that the microscopist should be a clinician if the best results are to be obtained. He calls attention to the necessity of having a sufficiently large specimen so that a section may be made into healthy tissue.

Doctor Jackson considers "Primary Malignant Disease of the Larynx." Malignant disease of the larynx may be primary or secondary, intrinsic or extrinsic, carcinomatous or sarcomatous. If secondary it may be extensionary or metastatic. Extension may be from the laryngo-pharynx, esophagus or lymphatic glands of the neck. Doctor Jackson takes up at length the different points to be considered, but in his résumé he gives the essential points, as follows:

"The factors in the etiology of carcinoma are age, sex, heredity, (?) syphilis, (?) irritation, and precancerous benign neoplasms.

"The sites in the order of frequency are, the glottic boundaries, the epiglottis, posterior surface of the cricoid cartilage, interarytenoid fold, ary-epiglottic ligament, ventricular bands, the ventricle, and the infraglottic region.

"The symptoms are dysphonia, hoarseness, aphonia, cough, expectoration of frothy secretion, dyspnea, hemorrhage, orthopnea, pain—laryngeal and referred to the ears, dysphagia, odynphagia, fetor and cachexia.

"The laryngoscopic appearances may show paralysis of a cord, a more or less diffuse redness, or a protusion appearing snow white, dirty gray, pinkish or reddish, in form, papillomatous, warty with sharply-pointed elevations, with intervening rounded granulations, or an ulcer.

"It may be simple or multiple, and is often covered with pus or frothy saliva.

"The diagnosis will rest upon the age, fetor, cachexia, adenopathy, pain, duration, paralysis of the cord, palpitation of the thyroid cartilage and the microscopic report. Syphilis, perichondritis, lupus, tuberculosis, chronic laryngitis, blood clots and hemorrhagic spots, pachydermia, eversion of the ventricle and benign growths will have to be excluded in the diagnosis.

"The prognosis as to termination is unfavorable but not hopeless. In early operated intrinsic malignant disease it is good. In disease extrinsic by origin or extension, and when the lymphatics are infected, it is unfavorable. Prognosis as to duration, from two to ten years, may be promised if seen early. As to recurrence, the prognosis is the same as mentioned of termination. Prognosis as to voice in early thyrotomized intrinsic cases is fairly good; in late cases requiring laryngectomy, some kind of sound answering for speech may be promised.

"Treatment may be palliative or radical. Palliative measures include tracheotomy, esophagostomy (or gastroenterostomy), cleansing sprays and gargles and analgesics.

"Serum therapy, Finsen's light rays, Roentgen rays and radioactive substances are not yet proven of benefit.

"Partial endolaryngeal removal of the malignant mass is absolutely unjustifiable, even for the dyspnea, unless consent to a tracheotomy cannot be obtained.

"Radical treatment. Unless total removal of infection is a reasonable possibility, no operation is justifiable except tracheotomy, esophagotomy or whatever else may be planned to prevent or postpone inanition or asphyxia.

"Radical endolaryngeal extirpation is impossible. Radical measures include transhyoid and infrahyoid pharyngotomy, thyrotomy, partial laryngectomy and total laryngectomy.

"Pharyngotomy, transhyoid and subhyoid, are adapted only to disease limited to the epiglottis.

"Thyrotomy is the operation of election under the following conditions:

"(1) An intrinsic growth.
"(2) A limited extent of disease.
"(3) Malignancy.
"(4) Suspected malignancy (exploratory thyrotomy).
"(5) No involvement of the thyroid cartilages.
"(6) No granular involvement.

"Partial laryngectomy is advisable when at thyrotomy removable malignant extension is found.

"Total laryngectomy with, if necessary, removal of all infected glands and tissues is indicated when the patient desires a chance of cure, with, in any event, increased comfort for a variable period, when the disease is extrinsic by origin or extension, or when though intrinsic, it is so extensive that sufficient surrounding healthy tissue cannot be otherwise removed.

"Total laryngectomy, with modern technique, prosthetic appliances and the possibilities of buccal voice, is not the formidable prospect for the patient that it was formerly.

"Preliminary stitching the trachea to a buttonhole in the skin, the avoidance of opiates, the combined Trendelenburg-Rose position, 'talking anesthesia' with chloroform, allowing the patient to 'come out' before the stitches are put in, careful postoperative watching, very frequent cleansing of the canula, and keeping the patient prone after the operation—all these will reduce the danger of postoperative pneumonia to almost nothing.

"Rectal alimentation is a delusion and a snare. Feeding should be by esophageal tube for a few days until swallowing is easy.

"The use of a brilliant head lamp facilitates thorough extirpation.

"The curette has no place in the extirpation of laryngeal malignant disease. It rubs in the infection as a rake buries seed in the soil. A clean cut with knife and scissors through healthy tissue beyond the invaded area is the best method."

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY, M. D., ANN ARBOR, MICHIGAN.
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MUCOUS MEMBRANE AND SKIN DISEASES.

Two papers that were read before the American Dermatological Association by Doctors John A. Fordyce and M. F. Engeman on "Affections of Mucous Membranes in Their Relations to Skin Diseases," and published in the *Journal of Cutaneous Diseases*, for September, give interesting instances of such relation, especially in the oral and digestive track, nasal, conjunctival and genital mucous surfaces. These papers are so comprehensive and full that a mere abstract can make but scant mention of the many salient points, and as each author treats the subject somewhat differently, we will consider first the paper of Engeman.

He classifies them into those diseases which affect both the mucous membrane and the skin by direct local autoinoculation one from the other, as well as through general systemic involvement, whether by the action upon the skin and mucosa of toxins metabolically produced with or without the aid of microorganisms or other known agents, or the formation of emboli of microorganisms on the skin and mucous membrane.

Instances are cited of disease apparently due to microorganisms which are conveyed from the mucous membranes to the skin and *vice versa* by autoinfection, are shown in sycoses of the lip following catarrhal affections of the mucous membranes of the nasal fossæ, and in various forms of dermatitis associated with distinct history of suppurative processes or catarrhal conditions of the mucous membrane of the nose, throat, ear, or eye, or of the urethral, vaginal, or rectal surfaces.

Bullous, and less frequently other forms of impetigo, are often associated with mucous membrane catarrhs, and, as Holt says, it is often difficult to make a differential diagnosis of syphilis when an infant has rhinitis with pharyngeal involvement and bullæ upon the skin. It is still more difficult in cases invested with a dermatitis spreading beyond the diaper region.

Attention is called to impetigo in children with septic mothers, and to various forms of eczema and furunculosis associated with summer diarrhea.

Vassant, in a bacteriological examination of one hundred cases of rhinitis, found streptococci fifty-eight times and diphtheria bacilli twenty-six times.

Cases are cited of external rhinitis in children after scarlatina associated with dermatitis of the lips and pustules on the cheeks and fingers in which is found the diphtheria bacillus of weak virulence.

There is some confusion in the names, pathology and clinical symptoms of disease of the tongue and mouth. Many diseases of the mouth and tongue are crowded under the cover of the word leucoplakia as are a variety of dermatoses under the term eczema. Secondary infections of the buccal mucous membrane from the skin, and the skin from the mouth, are of great practical importance, and many of these autoinfections partake of the characteristics of seborrheic dermatitis.

The colon bacillus has been found to produce lesions on the skin by local autoinfection. Kaposi's famous case of acute favus infection is cited, in which typical foci of the fungus were found in the esophagus, stomach, and intestines.

Drug rashes, urticaria, erythema pemphigus, multiform and bullous, impetigo herpetiformis and lupus erythematosus, herpes, lichen planus, pigmentary diseases, embolic eruptions of the skin and mucous membranes furnish evidence as cause or effect of autoinfection or metastatic disease in skin or mucous membranes from one to the other.

PSYCHIATRY.

By WILLIAM M. EDWARDS, M. D., Kalamazoo, Michigan.

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DELIRIUM FROM NERVOUS SHOCK.

Doctor Pearce Bailey, chief of the Vanderbilt Clinic of New York City, publishes in the *Medical News*, August 27, 1904, an exhaustive and scholarly article under the above title. He defines delirium as including mental states characterized by psychomotor unrest, insomnia, clouding of consciousness and incoherency with or without delusions, hallucinations and illusions. There are many causes but occurring late in infections as typhoid fever, pneumonia, et cetera, it has the characteristics of a true psychosis exhaustive in nature. Similar to the toxic cases are those following large losses of blood, for example, after surgical operations and in puerperal conditions. He regards these psychoses as temporary but not always of favorable prognosis as mental defects may be permanent and in states of physical exhaustion death often occurs. Various names have been given these conditions by alienists which the author regards as indicative only of degree of severity and cause. Fundamentally all show delirium of varying degree, physical debility, pinched features, dry mouth and tongue, disturbed heart action and gastrointestinal disorders. He classifies traumatic delirium with the foregoing and says it appears at once or in a few days after unconsciousness following trauma capitis and does not differ in symptoms or course from deliria of other origin. Another frequently mentioned cause is nervous shock including sudden fright, grief, remorse and even joy. He emphasizes the importance of the emotional factor in somatic and mental disease and mentions the effect of great catastrophes as battles, conflagrations, earthquakes, et cetera.

Doctor Bailey says as important as are the emotional factors in causation of delirium to prove them unique factors is quite a different matter. Psychic shock may induce heart failure or apoplexy in cases with preexisting vascular disease. He states his belief that the case is yet to be advanced in which life ceased as the immediate consequence of such causes alone. He recognizes their effect in the production of nervous diseases, quite frequently causing chorea and occasionally paralysis agitans and exophthalmic goiter.

Heredity and neurasthenia are neuroses in which these causes figure very prominently but in these cases a marked predisposition is demonstrable. He speaks of the medicolegal aspect of such cases and says that the physical injury, when one exists, is apt to overshadow the nervous shock, especially if there is litigation, as it has been held that whatever the mental or moral effects the case is not actionable unless there is some bodily injury.

In discussing the influence of shock in causing insanity he well says that "in insanity with its complex and little understood etiology it is well-nigh impossible to single out any one factor as the sole cause." He thinks that emotional factors operate more commonly here than in somatic disease and where there is marked predisposition any such cause looses very much in weight. In studying the literature he was surprised to discover how few cases there are in which insanity can legitimately be regarded as the result of nervous shock, the test being absence of predisposition and other causes and a nervous shock of great intensity.

He describes graphically and in detail a patient who was injured in the tunnel railway disaster in New York City in 1902. This man was subjected to great mental distress and physical exertion. When removed from the tunnel he soon lost consciousness, was taken to Bellevue Hospital where both legs were found to be broken but no evidence of cranial injury. Doctor Bailey saw him first about the middle of January, 1902, and was consulted at intervals until the middle of October, 1903. The patient had been at the head of a large business in New York, had supervised it, made estimates, personally conducted large exhibits, was without hereditary taint with no history of specific infection or alcoholism. A month after the injury he suffered from a severe attack of erysipelas. A year and a half after the injury a résumé of the case showed the following: A previously healthy man, fifty-four years of age, after a severe mental shock lasting two hours during which he made muscular exertions and received serious injuries, passed into collapse-delirium. After subsidence the condition was called again into activity by a complicating infection. Finally, the patient is living in good physical condition but with slowness in perception, indecision and instability of recent memory impressions, absolutely uncertain in the arithmetical faculty and impairment in the faculty of written and spoken speech. Doctor Bailey differentiates such a mental state from the delusional one of hysteria and from neurasthenia. As pathology he assumes an exhaustion of the cortical cells brought about by brief but excessive stimulation.

He describes the case of a married woman, aged twenty-seven, normal mentally, without hereditary taint, who suffered an extreme emotional shock from seeing her husband in company with another woman. She did not sleep the night following the occurrence, was more disturbed next day, and five days later although in good physical condition she showed a mental picture of confusion. She did not recognize her physician or the consultant in their true capacity but mistook them for former acquaintances, had illusions, was irrelevant and the occurrence which was the cause of the attack seemed to have faded from her mind. After three weeks she began to improve and made a perfect recovery.

Doctor Bailey cites the following cases from the literature: A woman always timid, and who had no symptoms of insanity nor hereditary tendency and with healthy children, learning that a tenant in her house had hung himself, fainted but soon recovered herself. She then began to cry and moan, a condition which was continuous for five days. She then began to wander in speech, showed psychomotor agitation, neither slept nor ate, and these symptoms progressed until she died in coma on the eleventh day. Autopsy showed multiple punctate hemorrhage in the cortex, cerebellum and base. The cause is explained by assuming a sudden rise in blood pressure from fright.

A girl, seven and one-half years old, normal in every way, was frightened by two boys dressed as ghosts. She ran home crying, sank exhausted to the floor, vomited, went into general convulsions and died ten hours later. Autopsy showed excessive distension of the blood-vessels of the brain and cerebral membranes.

A girl, aged two and one-half years, previously normal, was frightened by a boy in a mask. She trembled violently, could talk only of the object frightening her, health declined rapidly, on the thirteenth day she went into convulsions confined to the diaphragm and face and died. Autopsy showed great congestion of the brain and its membranes.

In the bombardment of Strasburg a physician was suddenly forced to leave his house which had been fired by a bomb. He soon developed terrifying hallucinations, insomia and agitation which gave place to coma and paralysis and death in five days.

A boy, aged ten years, was frightened by a cannon ball passing close to his head. He ran home and was immediately taken with chills, vomiting, delirium, convulsions and died in a few hours.

Doctor Bailey says that while the real pathology of delirium in nervous shock is entirely in speculative domains there are strong reasons to believe it is connected with disturbance of the cerebral circulation. He says that the symptoms of delirium from nervous shock are strikingly similar to insanity caused by head injuries and it is his opinion that traumatic delirium is due not to mechanical disarrangement of the brain matter but to changes in blood supply and pressure, and he concludes that this form and delirium from emotional causes are closely allied in pathogenesis as in their clinical aspects.

NEUROLOGY.

By DAVID INGLIS, M. D., DETROIT, MICHIGAN.

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CEREBRAL LESIONS DUE TO UREMIA.

MEDICAL literature contains an increasing number of reports of partial or extensive cerebral paralysis in which postmortem reveals no rupture or occlusion of any cerebral blood-vessel, nor indeed any recognizable cerebral lesion. The history of the case, in life, may be that of renal disease or the first recognition of disease of the kidneys may be made from the postmortem.

A fairly large number of cases of aphasia, due to uremia, have been put on record. In some the aphasia proves transient; in some permanent. Similarly hemiplegia more or less complete results quite frequently from uremia, and this again may be transient or lasting. This relation of uremia was at first disputed but must now be accepted.

A recent contribution by Doctor T. H. Weisenburg (Proceedings of the Pathological Society of Philadelphia, 1904) throws a most interesting light on the subject. After death in such cases the only macroscopic change in the nervous system is an edema of the brain and meninges.

It is probable, although of course not demonstrable, that in the lighter and transient forms we have to deal with an edema only. We can conceive of a small edematous area, of which the puffiness of the lower lid forms an excellent visible example, as causing an aphasia or localized paralysis—motor or sensory. Granted that the edema is rapidly reabsorbed the effect of the pressure soon passes off and presently the patient recovers. Sometimes a patient will have a succession of such transient paralyses.

Weisenburg, however, reports the finding of chromatolysis of cells in the central nervous system, and in one case this was associated with recent primary degeneration of the central motor tract. The changes in the cells were not only in the brain, but cells of the anterior horns of the cord as well as of the cerebellum and medulla showed degeneration as well as fibres of one motor tract. The practical side of this bears first upon our recognition of the fact that uremic poisoning can set up edema of the brain and so paralysis, but also that it can start graver changes in cell and fibre, changes which start a degeneration of a widespread sort—likely to be lasting in their effect.

Therapeutically the recognition of these possible brain lesions ought to lead to the most energetic efforts to forestall uremia. Or, if the slightest cerebral defect is manifest, to a prompt and vigorous effort to relieve the brain of the impending danger.

THERAPEUTICS.

By DELOS LEONARD PARKER, Ph. B., M. D., Detroit, Michigan.
LECTURER ON MATERIA MEDICA IN THE DETROIT COLLEGE OF MEDICINE

ELECTRICITY IN ACUTE INFLAMMATORY CONDITIONS.

An editorial in the September number of *The Journal of Advanced Therapeutics* outlines the writer's views in relation to the use of electricity for the purpose of overcoming inflammations in their acuter stages. It begins by saying it has been the idea of physicians for years that in the conditions referred to electricity could not be employed without doing damage.

This the writer thinks was not to be wondered at since the views of many in the medical profession are based on results obtained when the continuous current was generally in vogue, when the polar actions of the current were not well understood, and there was no way of determining the resistance and regulating the current employed. Had the earlier investigators had at their disposal devices since brought into common use the prejudice many hold today against electricity as a therapeutic measure would never have come into existence.

The writer goes on to say that while the continuous current is capable of relieving certain acute inflammatory conditions it yet is not the one depended on at the present time. High-potential currents of small quantity are the ones made use of for the relief of inflammation. These currents are efficient and at the same time are harmless.

The condition to be observed is described as local stasis. For centuries rubbing, friction, stroking, massage and counterirritation have been employed to remedy this condition and have been of much greater value than drugs. High-potential currents, however, by causing contraction of cell protoplasm in the involved muscular tissues, induce an unloading of the regions of infiltration by expression and increased activity of the organs of excretion. They also regulate the circulation and affect metabolism in such a way as to favor the return of normal conditions. "In the first stages of acute abscesses, as felons, boils and tonsillitis, that is, preceding suppuration, abortion is effected. In cases of traumatism, neuritis and visceral congestion, no means afford such prompt relief as the early administration of high-potential currents."

EDITORIAL COMMENT.

THE RETURNS OF THE REGENTS.

THE wisdom of Franklin's proverb, that "the eye of a master will do more work than his hand," is not invariably beyond question. Evidently "Poor Richard" was not obliged to reckon with the problem contemplated in teaching and operating in four medical specialties when this sentiment evoked expression, otherwise the role of the hand would probably have been accorded befitting consideration. However this may be, there is no doubt that the governing body of the University of Michigan manifested good judgment in disregarding the maxim of the great philosopher and granting certain branches in the medical department clinical representation commensurate with the importance which the several ologies have attained. As has already been intimated, the departments of otology, rhinology and laryngology, which have clustered around the tree of ophthalmology since the time of its implantation upon the curriculum of this school, have been separated from the trunk and now constitute an independent department, leaving ophthalmology entirely unencumbered. The division was rendered necessary by reason of the fact that the chair had become too unwieldly for any one clinician, even though ably supported by a corps of assistants, to operate with the degree of satisfaction desired. Under the new regime two departments will be in evidence, Doctor Walter R. Parker, of Detroit, having been appointed to the Clinical Professorship of Ophthalmology, and Doctor R. Bishop Canfield, of New York City, to the Clinical Professorship of Otology, Rhinology and Laryngology.

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WALTER ROBERT PARKER is the son of a physician, and was born at Marine City, Michigan, thirty-eight years ago. His early educational training was received in the schools of his native city and at the Michigan Military Academy, where the foundation was laid for a course at the University of Michigan, from which institution he obtained the degree of Bachelor of Science in 1888. At this juncture it became necessary for him to choose a life vocation, and his inclination to adopt a profession eventually led him to elect the healing art, whereupon he entered the University of Pennsylvania, receiving the degree of Doctor of Medicine therefrom in 1891. He supplemented his collegiate training by a service of three years in the general hospitals of Philadelphia, one year being spent in the capacity of house surgeon of the Wills Eye hospital. Three years later he pursued a postgraduate course in ophthalmology and otology in Vienna, where he augmented his experience at the clinics of the most eminent teachers in the Austrian capital. For the past ten years he has practiced in Detroit, where special attention to diseases of the eye and ear has secured a lucrative practice. As an evidence of the high regard in which he is held by his clientele it may be mentioned that early in the present year he was called to Hong Kong to treat the eyes of a former Detroiter whose business connection prevented his leaving the Celestial Empire. For a number of years the doctor has been identified with the teaching force of the Detroit College of Medicine, as clinical assistant to Doctor Eugene Smith, and, since its inception, with the Detroit Postgraduate School of Medicine. He is eminently qualified to maintain the excellent reputation of the ophthalmic clinic in his new field of labor. In addition to his scientific attainments the advantages of a military training bespeak disciplinary equipment calculated to insure systematic work in the department over

WALTER ROBERT PARKER.

which he presides. During the Spanish-American embroglio this military schooling served him in good stead on the U. S. S. Yosemite, a vessel manned by the Michigan Naval Reserves of which he was an officer. Doctor Parker is affiliated with local, state, and national medical societies, at the meetings of which he is a contributor of papers dealing with diseases and conditions peculiar to the line of practice in which he is engaged. For several years he has been a member of the editorial staff of this journal, conducting the department of Ophthalmology and contributing original papers.

* * *

R. Bishop Canfield is likewise a product of the Middle West, having been born in Chicago July 22, 1874, where he received his academic education. His collegiate training was acquired at the University of Michigan, the degree of Bachelor of Arts having been obtained in 1897, and that of Doctor of Medicine in 1899. Immediately after graduating he was appointed assistant to the professor of ophthalmology at his alma mater, which position he occupied from June, 1899, to January, 1900, when he resigned to accept the responsibility of house surgeon at the Massachusetts Charitable Eye and Ear Infirmary in Boston, an appointment he filled from January, 1900, to April, 1901, when he went abroad. He spent two and one-half years studying his specialty at the Continental clinics, one year of which time—from October, 1901, to October, 1902—being assigned to the position of assistant surgeon and chief of clinic—Jansen's clinic—at the Imperial University of Friedrich Wilhelm in Berlin. Returning to this country Doctor Canfield began practice in New York City, where he soon received appointment as assistant surgeon at the Manhattan Eye and Ear Hospital, and as attending laryngologist to the Pulmonary Clinic of the City of New York. The doctor is a member of the American Laryngological, Rhinological and Otological Society, and of the New York Academy of Medicine. His collegiate credentials, clinical experience, and private practice attest his qualification for the position to which he has been appointed.

R. BISHOP CANFIELD

SENSE AND SENTIMENT IN THE DRUG AND INSTRUMENT BUSINESS.

THE question whether physicians who have discovered new healing principles or invented new apparatus shall take out patents is one that cannot be solved readily. No one objects to the copyright of a book by the physician, but many object to the patenting of a synthetic compound or a new forceps or needle holder. Yet the cases are not really dissimilar, and the mere fact that patents often fail to protect the inventor in his financial returns does not affect the principle. The most important objection, but one that we do not often see stated, arises from the fact that an inventor can exploit a drug or instrument more effectively because more insidiously than he can a book. At least, it is not easy for an author to puff his own book, while the inventor of a hypnotic, an intestinal antiseptic, a typhoid specific, an antiserum or an antitoxin can and often does lead a Jekyll and Hyde existence, writing quasiscientific articles in favor of the inventions in one person while in the other he draws in royalties from the sale stimulated by the articles. The inventor of an instrument has the same "potentialities of acquiring wealth beyond the dreams of avarice;" but the worth or lack of worth in an instrument is more obvious than in the case of a medicine.

* * *

IT seems doubtful whether anything but a utopian soundness of opinion or a millennial absence of greed can ever check abuses like those incident to the exploitation of new healing principles. In the meantime it seems unfortunate that transcendental standards should be introduced into the matter. In a recent number of a contemporary usually sane, we find the following in regard to "pollantin," the hay fever antidote of Dunbar: "Should the serum treatment ultimately prove to be positively efficacious in hay fever, it is highly desirable that it be furnished to the great mass of sufferers at a nominal cost and not for purely commercial gain." We admit that no remedy should be sold for "purely commercial gain" if by that we mean that no care for purity and genuine value enter into the transaction; but we fail to understand why pollantin, if it proves to be "positively efficacious," should be sold at a nominal cost any more than quinine, opium, cascara sagrada, or iodid of potassium, or indeed than rice, sugar or flour, coal or diamonds. While the substance is in the experimental stage it seems to be desirable that subjects treated should not be financially punished for serving as experimental animals. Drug manufacturers should be willing to spend money in perfecting or proving the value of new substances just as other manufacturers do. As a matter of fact they do not often do this and, to the discredit of the medical profession, physicians too often abet them in the opposite course. Physicians, who for their own use would not buy untested or unwarranted goods, think nothing of recommending patients to buy expensive medicines of whose virtues they are entirely ignorant. This evil would be lessened and the real worth of new drugs would be made known more surely and more rapidly if new drugs were first used without expense to patients. But after their qualities are fairly known there seems no reason why medicines should not bring in a fair return to the makers even if they do not to the original discoverer.

ANNOTATIONS.

EMULATE THE EXAMPLE.

We are pleased to note the success of the *Munchener Medicinische Wochenschrift,* which has long borne the envious reputation of enjoying a circulation "which no organ of our science has heretofore ever approximately possessed." This representative journal of the medical sciences is owned, edited, and published by physicians, among them being Leube, Penzoldt, Spatz and several other distinguished men. Like some of our American journals this publication is a money-maker, but unlike them it has turned a portion of its earnings over to certain societies that aid the widows and orphans of physicians, and does other noteworthy deeds. As an illustration, the past year's donations amounted to two thousand six hundred dollars, half of which was presented to the Pettenkofer Memorial Building fund. The earnings of the American Medical Association, above all expenses, is said to be upwards of forty thousand dollars yearly. What shall be done with it? Our German confreres have set the pace. D. M. C.

CONTEMPORARY.

THE IMPORTANCE OF THE STUDY OF THE HISTORY OF MEDICINE.

[SAINT LOUIS MEDICAL REVIEW.]

Anent the approaching new session of our various medical schools, it is particularly apropos to comment on the lack of teaching offered along the line of historical medicine. It is a fact, that in none of our well equipped university medical schools, with the single exception of the University of Maryland, is there any attempt made to impart a systematic and orderly knowledge of the achievements of medicine in the past. Medico-historical societies sporadically scattered here and there, such as the one at Johns Hopkins University and The Medical Library and Historical Journal, of Brooklyn, are about the only active factors at work in America, that tend to cultivate the historical spirit of medicine. The cause of this state of affairs naturally resides in the fact that our various medical faculties lay absolutely no stress on the importance of this phase of medicine.

It is indeed strange, that just during the present era, when American medical educators are busily pointing out the growing excellencies of our medical educational system, when prophesies are rife that in a few years the exodus of the world's students of medicine will be towards America's shores, instead of away from them towards the continent, that even now, with all our forward strides, and rich endowments, our medical schools are lacking in historical departments. The smallest German universities offer their students courses in the historical development of medicine; the largest American universities lead their students to believe, by natural inference, that medicine buds and blossoms in the present, a science sui generis wending its way, untrammelled by the shackles of past heresies, independent of past efforts and discoveries, unconcerned with the development of general philosophical theories and systems, gloriously working out its own salvation.

The fallacy, in the position thus assumed by our medical schools must be patent, even to the uninitiated. Medicine, in addition to being one of the arts and sciences, ought rationally to be considered as one of the humanities, demanding of its disciples, in addition to their technical and special skill, a certain medical culture and tone, breadth of view, rational critique, and above all, poise and balance of mind. It is unconditionally irrational to presuppose that these qualities can be cultivated in one who is unacquainted with the achievements of medicine of the past and its failures, the wanderings that have led to nowhere, and the fundamental discoveries that have culminated in our firmly established truths.

It is, indeed, little short of deplorable, that to the average American physician, Sylvius calls to mind only a cerebral fissure, Douglas, an unfortunately situated peritoneal pouch, Magendie a convenient solution of morphine, and Malpighi an ornamentally convoluted kidney tubule. These men and their works, their methods, and their results, are active factors in the present day science of medicine. An appreciation of this fact, if it did nothing more, would find its justification in its power of impressing upon students, that the medicine of today is only a superstructure building on the firm foundation of past achievements.

Historical medicine appeals to the fullest extent only to him, who enjoys the pleasure and personal warmth that comes from knowing our past masters. Not on this ground, however, is the plea made for the introduction of historical courses, but on the purely utilitarian basis, that a knowledge of medical history makes a broader, a keener, and an all in all better physician.

EXPERIMENTAL RESEARCH INTO STRYCHNINE IN SHOCK AND COLLAPSE.

[CINCINNATI LANCET-CLINIC]

It is often a matter of the greatest difficulty in conditions attended by shock and collapse to know just what measures are indicated to bring about a rescuscitation of the patient and his return to a state in which operative interference may be continued. G. W. Crile, of Cleveland, whose brilliant experimental work will ever cause his name to be associated with the highest surgical progress, has lately contributed a series of experiments in this particular line, a summary of which will be sufficient to point out the line of treatment to be pursued when similar conditions are encountered in the human subject.

In the normal animal, when strychnia is given in doses large enough to cause augmented spinal irritability, as shown by increased reflex action, there was noted a rise in the blood pressure. This stage of increased cord excitability may be regarded as representing the dividing line between a dosage of maximum effect and a dosage of no effect. That is to say, smaller doses had little or nó effect upon blood pressure, larger raising it abruptly and high, often to double the normal, and likewise producing convulsions. As long as the latter were in evidence the blood pressure curve was extremely irregular, and a return of the convulsive movements was again accompanied by a rise in pressure. Repeated same doses produced a like result. The next step was to again administer convulsive doses of strychnine, however, preventing the convulsions by physiological doses of curare; nevertheless, the blood pressure rose quite as high as in those cases in which convulsions were permitted to occur, showing conclusively that the convulsive movements *per se* had nothing to do with the causation of the blood-pressure rise.

In another series, in which both vagi and accelerators were cut, convulsions prevented by curare, and strychnine administered, the general effect upon the blood pressure did not differ in any essential degree from the results of similar dosage upon the normal animal, again showing that the effect of the strychnia was to cause a rise independent of any action of the constrictor or accelerator nerves.

The next point brought out by these beautiful experiments was the length of time that could be relied upon for continued high pressure. In the two last series, the curarized animal and the one with cut vagi and accelerantes, the giving of the physiological dose of strychnia maintained the pressure for from a half hour to an hour and a half. Repeating the dose, a second rise occurred, sometimes, though not as a rule, as high as the first, and lasting for a much shorter time, usually but a few minutes. Further dosage soon brought the animal to a point where no effect could be noted. It is also to be stated that when the effect had worn off after each injection the blood pressure fell to a lower level than it had been before the injection was given, until a point was finally reached where repeated dosage produced no change. Electrically stimulating the sciatic nerve or burning one of the paws of the animal produced a further rise if the animal were still subject to the repeated doses of strychnine; but when the strychnine was unable to produce any result neither the electric nor the physical agent were effective.

When the blood pressure had reached what Crile aptly termed "the stage of terminal helplessness," the hypodermic injection of normal saline solution produced a rise, which continued for some time; adrenalin administered at this stage also caused a rise, the nature and duration of which varied in direct proportion to the amount of the drug injected; bandaging as well as the other means of external pressure were also successful, so that there are physiological grounds for the use of all these different means of combating shock. Small doses of strychnine seemed to cause an improvement in respiration, while large doses were often followed by respiratory failure. As regards the pulse, in the animals in which both accelerators and both vagi were cut, no change was produced in the rate by any dosage.

Naturally, in the course of the experiments there were animals in which there existed different degrees of shock. As a rule, the strychnine caused a rise in the pressure in direct ratio to the degree of shock. Where the latter was slight, the rise and continuation were proportionately less. On the contrary, when the degree of shock was great, even on repeating the injections, frequently no rise occurred. With moderate shock there might be some rise. Where the degree was deep almost to a fatal issue, the first injection produced but a slight, evanescent rise, which could not be maintained or duplicated by any amount of strychnine.

A number of other experiments were made, which, while extremely interesting, have not the great practical application as have those to which attention has just been called. They prove clearly and easily that the methods of resuscitation which have heretofore been employed more or less empirically have an actual foundation in physiologic fact.

MEDICAL NEWS.

THE DEMISE OF FINSEN.

Doctor Niels Finsen, the man who set the world agog by his announcement of the discovery of light rays for the treatment of lupus, and director of the Finsen Ray Institute at Copenhagen, died in that city September 24. The doctor was born in Iceland in 1860, and received his early training in a little school on one of the Faroe Islands. His medical education was acquired at the University of Copenhagen, where, broken in health, he graduated in 1890, since which time he has never been well. He was preceptor of anatomy at the University of Copenhagen from 1890 to 1893, and it was while occupying this position that he evolved his theory of the power of the rays of light. His first step toward the goal that he finally attained was the discovery that red rays are helpful and blue rays harmful to life. The next discovery was that if a smallpox patient were subjected to the influence of red rays the pitting would be appreciably less. The sun's rays were employed in early applications, but owing to the scarcity of this product in that region, electric light was substituted with equal therapeutic effect. The institution at Rosenoaenget afforded treatment for the poor as well as for the rich, each paying according to the size of his purse, and the government essaying to help the good work along by contributing the measley sum of twelve hundred dollars a year. In December, 1903, he was awarded the Nobel medical prize by the Norwegian Parliament.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THE annual meeting of this organization was held in Cincinnati on October 11, 12 and 13, under the presidency of Doctor Hugh T. Patrick, of Chicago. The program contained the titles of seventy-nine papers, thirty-three being assigned to the medical section and forty-six to the surgical. A large number of the papers were actually read and the meeting was pregnant with interest from a scientific viewpoint. Present day medical literature received consideration in the president's address, particular attention being directed to criticizing the claptrap brand, the existence of which is maintained by questionable means. "Surgical Tuberculosis in the Abdominal Cavity" was the title of the address on surgery, and was delivered by Doctor William J. Mayo, of Rochester, Minnesota. Doctor C. Travis Drennen, of Hot Springs, Arkansas, delivered the address on medicine, discussing "Diseases that Affect the Joints." The following officers were elected for the ensuing year: President, Doctor Bransford Lewis, of Saint Louis; vicepresidents, Doctors Frank Norbury, of Jacksonville, Illinois, and J. Henry Carstens, of Detroit; treasurer, Doctor Samuel C. Stanton, of Chicago; secretary, Doctor Henry E. Tuley (reëlected). Doctor John T. Barnhill, of Indianapolis, was elected assistant secretary. About three hundred members of the profession practicing in the Middle West were in attendance. The next meeting will be held in Indianapolis.

MINOR INTELLIGENCE.

ACCORDING to report the Russian troops at Harbin are suffering from a severe epidemic of typhoid. The disease is thought to have had its source in the wells of the city, which is without ample drainage facilities.

RUSSIAN casualties at Liaoyang are announced as follows: Men killed, 1,810; wounded, 10,811; left on the field, 1,212. There were 54 officers killed, 252 wounded, and 5 left on the field. Three generals were wounded and two were killed.

DURING the year ending June 30, 1904, the railroads of the country carried over six hundred ninety-four thousand passengers. The number of injuries recorded for the year was eighty-six thousand three hundred ninety-three, of which number nearly ten thousand resulted in death.

SIR WILLIAM MCGREGOR, M. D., who is at present Governor of Lagos, has been appointed by King Edward to succeed Sir Caverdish Boyle as Governor and Commander-in-Chief of Newfoundland.

DURING the year 1903, 64,916 births and 41,376 deaths were reported in Ohio. The principal cause of death was tuberculosis, from which disease 3,237 persons succumbed. Cancer, which caused over a thousand deaths, was second in the list.

REPORT says that the city council of Toledo, Ohio, has passed an ordinance granting carriages and vehicles of physicians the privilege of the thoroughfares in emergency cases, a fine of twenty-five dollars being the penalty for violation of the mandate.

A NEW pavilion has been added to the Saint Mary's Hospital Borough of Queen's, New York, at a cost of seventy-five thousand dollars. The annex is of brick and stone, is three stories in height, and affords accommodation for seventy-five patients.

A CIRCULAR has been issued by the profession of Germany warning young men against electing a medical career. It discusses the crowded condition of the profession in proportion to the population and mentions the lack of adequate legislation regarding quacks.

THE Japanese authorities have issued an edict abolishing the torture of foot-binding, as practiced by the female sex, on the island of Formosa. The feet of each child under six years have been ordered unbound, and a fine of one hundred dollars will be imposed for every breach of the decree.

COLUMBIA UNIVERSITY was recently the recipient of $225,000 from Mr. and Mrs. W. D. Sloane, of New York City, for the establishment of a Sloane Maternity Hospital in connection with the University; and of $60,000 from H. W. Carpenter, of that city, to endow a chair in the department of medicine.

THROUGH the philanthropy of Mrs. Frederick T. Proctor, of Utica, New York, Saint Luke's Hospital of that city will be enlarged by a new building, which will afford accommodation for eighty beds. The ward will be constructed of brick, stone, and steel, and will be of the most approved modern type.

THROUGH the beneficence of Baron de Silvansky, a hospital has been established at Cannes for the treatment of wounded Russian officers. The furnishing for the institution will be donated by the Grand Duke Michael, the Grand Duchess Anastasia, of Mecklenburg-Schwerin, and Countess Torby.

DOCTOR C. L. HERRICK, editor of the *Journal of Comparative Neurology and Psychology*, died at Socorro, New Mexico, September 15. His death was due to tuberculosis, which he succeeded in holding in check for the past ten years, during which time zoological and geological literature has been enriched by many contributions from his prolific pen.

THE new surgical building and clinical amphitheatre, which was erected in connection with Johns Hopkins University at a cost of one hundred fifty thousand dollars, was formally opened on October 6, 1904. The structure is four stories high and is equipped with the most modern surgical apparatus.

THE tent colony which has recently been established at Phoenix, Arizona, by a number of Iowa physicians, will soon be in readiness to receive consumptive patients at a nominal rate. Competent physicians and nurses will be in charge, and every effort will be made to maintain perfect sanitary conditions.

ON September 7 the Board of Health of New York City passed an resolution prohibiting the sale of carbolic acid in solutions of over five per cent, except when ordered in a physician's prescription. The decree is a wise one, and will in all probability tend to decrease the number of suicides from this source.

ANTHRAX is prevalent near Burlington, Vermont, and several cattle have already died from the scourge. A farm hand who attended the animals is also ailing and his condition has been regarded as very critical. The source of the disease has been attributed to Australian wool which was used in the vicinity.

A CHARTER was granted on June 14, 1904, to the White League of Pennsylvania, which is organized for the purpose of eradicating tuberculosis. A site has been secured on the eastern slope of the Allegheny mountains at an elevation of fifteen hundred feet, where a camp will be established as soon as plans can be perfected.

A COLLEGE of modern medicine and surgery is to be established in China by several missionary societies in this country and England. A building which is estimated to cost fifty thousand dollars is now in process of construction. The course will cover a period of five years and will be open to native Chinese, regardless of creed.

THE establishment of a cancer research has been facilitated at Liverpool through the beneficence of a person who donated fifty thousand dollars in memory of his deceased wife. The investigations will be conducted at the Liverpool Infirmary, and a number of beds will be set aside for the observation of patients afflicted with cancer.

DOCTOR EDWARD W. LAMBERT, of New York City, who died July 17 last, was medical director of the Equitable Life Assurance Society from the date of its organization in 1859, to within a short time of his demise, and gave assent, either directly or indirectly, to nearly every policy issued by the company during the past forty-five years.

DOCTOR SPENCER MORRIS has bequeathed to his alma mater, the University of Pennsylvania, a sum of ten thousand dollars, the income from which will yearly be awarded as a prize to the student passing the highest examination for the degree of Doctor of Medicine. The donation will be known as the "Doctor Spencer Morris prize."

The annual report of the British Lunacy Commission shows an alarming increase of insanity in Great Britain. According to the yearly rendering which was published in January last, there were no less than 117,199 mental incompetents in England and Wales alone, which is an increase of over three thousand as shown by the report of the previous year.

As a penalty for refusing to be vaccinated, a resident of North Adams, Massachusetts, was recently sentenced to serve eight days in the House of Correction. As the institution in which he is confined requires that all inmates be vaccinated, he will undoubtedly experience the humiliation of being compelled to submit to the procedure, in addition to serving the prescribed sentence.

The town of West Chester and Pitcairn, Pennsylvania, are in the throes of an epidemic of typhoid, nearly forty cases having been reported in the former city, and over fifty in the latter, which has a population of only three thousand. The source of the epidemic has been traced to the milk supply, and several dairies have been condemned as the water with which they are furnished was found to be contaminated.

Professor Richet, of the Faculty of Medicine, Paris, estimates that the lives of approximately fourteen million men were sacrificed in the wars of the nineteenth century. Napoleon's various campaigns resulted in the loss of eight million men, and the Franco-German war furnished eight hundred thousand lives for the professor's computation. In the American Civil and Crimean wars, five hundred thousand and three hundred thousand men respectively met death.

The American Association of Obstetricians and Gynecologists elected the following officers at its recent Saint Louis meeting: President, Doctor Howard W. Longyear, of Detroit; vicepresidents, Doctors David Tod. Gilliam, of Columbus, Ohio, and John Young Brown, of Saint Louis; secretary, Doctor William W. Potter (reëlected), of Buffalo; treasurer, Doctor X. O. Werder (reëlected), of Pittsburgh. Doctors James F. W. Ross, of Toronto, and Walter B. Dorsett, of Saint Louis, were elected councilors. The next meeting will be held in New York City.

Sir John Simon, noted sanitarian and distinguished physician, died in London on July 23, 1904. His work in the line of sanitary reform was untiring, and it was mainly through his efforts that the city of London was equipped with a scientific drainage system. Doctor Simon was born in London in 1816, and obtained his medical education at King's College. For twenty-one years he held the important commission of central medical officer, and during this period many of his reports to the Privy Council were invaluable, one of them being a forceful defence of vaccination. The doctor was the author of many books and important papers. In 1887 he was made a K. C. B. by Queen Victoria on the occasion of her first jubilee.

FRANCIS JOSEPH, the Austrian Emperor, is erecting the largest hospital in Europe and one of the most perfect institutions of its kind in the world. The foundation stone has just been laid in Vienna. The hospital will comprise forty pavillions, the eighteen clinical institutes of which will be separate large buildings arranged for teaching purposes, demonstrations, et cetera. The whole area of the hospital is nearly sixty acres, forty-eight acres of which will be reserved for gardens. It will require ten years to complete the institution, and the cost of construction will be about $10,000,000. Each operating amphitheatre will afford accommodation for two hundred fifty students. In the clinical institutes for infectious diseases a glass screen will separate the patient from professor and students. A large ambulatorium will be an acquisition to every clinical institute, and flat roofs will afford patients an opportunity to lie in the open air, the weather and temperature permitting. The new hospital is designed to replace the well-known Allgemeine Krankenhaus in the Alserstrasse.

RECENT LITERATURE.

REVIEWS.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS FOR STUDENTS AND PHYSICIANS.*

MUSSER's Diagnosis is so well known that it needs no introduction, and it is so full and so complete that an adequate review would exceed the limits of space at the command of the reviewer. The demand for five editions within a few years not only proves the value of the work but at the same time makes clear the extent of a lively interest in the fundamental importance of the subject. Musser's Diagnosis is conspicuous among books on its subject not only by completeness of scope and fulness of detail, but most of all by the unusual wealth of personal diagnostic experience such as only a consummate master of medical art and an earnest and enthusiastic investigator and teacher can command. For this reason it commends itself especially to advanced students and practicing physicians. The new edition has about reached the limit of convenient size. It is clearly printed on good paper, and the numerous illustrations have been selected with the sole object of making the subject clear. A wide reception is sure to be given this new edition.
G. D.

*By John H. Musser, M. D., Professor of Clinical Medicine in the University of Pennsylvania, et cetera. Fifth edition, illustrated with 395 wood cuts and 63 colored plates. Lea Brothers & Company, Philadelphia and New York, 1904.

ABRAM SAGER, A. M., M. D.

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ORIGINAL ARTICLES.

MEMOIRS.

ABRAM SAGER, A. M., M. D.: HIS LIFE AND SERVICES.*

By G. CARL HUBER, M. D., Ann Arbor, Michigan.

PROFESSOR OF HISTOLOGY AND EMBRYOLOGY, AND DIRECTOR OF THE HISTOLOGICAL LABORATORY AT THE UNIVERSITY OF MICHIGAN.

I DEEM it a privilege and pleasure to accede to the wishes of the Students' Medical Society and to speak to you, briefly, this evening on the life and services of Abram Sager, one of the founders of the Department of Medicine and Surgery of the University of Michigan. The story of his life has never been fully written. I have been able to find only brief obituary notices, and here and there still briefer laudatory sketches, setting forth his high attainments as scientist and teacher. His writings, though not profuse, show some phases of this remarkable man worthy of consideration, and give us an insight into his deep learning and broad scholarship. From such insufficient data, I have gathered the facts to be presented.

The department of medicine of the University of Michigan was organized and established in 1850, nearly eight years after Doctor Sager became connected with the University. The story of the life of Abram Sager is replete with interest and presents many instructive lessons. It was a life given up almost wholly to labor and devoted to the well-being of the profession which he adorned. He himself has written that—"From my professional baptism forward, for forty years, and in common with all true and loyal men in the profession, I have ever held that fealty to my profession was primary and paramount to all other considerations; and acceptance of the position in the University was mainly as a means of advancement of a cause to which my loyalty and affection were due."

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*An Address delivered before the STUDENTS' MEDICAL SOCIETY OF THE UNIVERSITY OF MICHIGAN, on "Founders' Day."

Abram Sager was born at Bethlehem, Albany county, New York, December 22, 1810. His father, William Sager, was of Dutch descent, and settled as a farmer in the central part of New York at an early date, where he was married to Miss Hannah Brook. The subject of our sketch was the youngest of five children, two sisters and three brothers, and the only one to adopt a learned profession, his brothers following the occupation of their father. The existing records give us no insight into his early life and schooling, and I have been unable to ascertain whether, at this period, he showed any fondness for natural history, a subject to which in later years he devoted so much attention. In 1831, he was graduated from the Rensselaer Polytechnic Institute at Troy, New York, in which institution he had spent two years as pupil and instructor. While at the Rensselaer Institute, he was under the instruction of Professors Torrey and Eaton, men of note in the fields of Botany and Zoology. Their influence and guidance did much to direct his attention to these subjects. In this connection, I may add that, on the death of Professor Eaton, Doctor Sager was tendered the presidency of the Rennselaer Polytechnicum, but found it necessary to decline its acceptance. Subsequent to his graduation, he continued his studies at Albany and later at New Haven, Connecticut, where his work was under the supervision of Professors Marsh and Ives, names well known to American science. While at New Haven, he attended medical lectures, which were supplemented later at Albany, and still later at Castelton, Vermont, from the medical school of which place he graduated in April, 1835.

I regret that necessity compels me to speak thus briefly of the first twenty-five years of the life of this man, but the data at my disposal do not allow of more extended treatment.

After graduating in medicine, Doctor Sager came to Detroit, Michigan, and engaged in general practice. That this was not so extensive as to occupy all his time and command all his energy we may learn from the fact that, while in Detroit, no doubt separated from all stimuli to scientific research, away from laboratories and without the inspiration of scientific literature, other than that which he himself may have possessed, we find him engaged in investigations, the results of which were worthy of publication, and to his European co-workers seemed worthy of translation. After some years of residence in Detroit, how many I cannot say, during which period he was married to Miss Sarah Dwight (1838), he removed to Jackson, the home of the parents of Mrs. Sager. Here he remained until 1842, at which time he entered on his work in the newly established University of Michigan.

In the obituary notices which I was able to consult, brief mention is made of the fact that in 1837 Doctor Sager was appointed chief-in-charge of the botanical and zoölogical department of the Michigan State Geological Survey. My attempt to verify this statement gave me the following information: In February, 1837, Governor Mason approved an act for the organization of a geological survey of the State of Michigan. It provided for a geological, zoölogical, botanical, and topographical survey. Under this act were appointed, among others, Douglas Houghton, geologist; and Abram Sager, principal assistant in charge of the botanical and zoölogical departments. In February, 1838, Doctor Houghton presented his first annual report, which deals mainly with the topography of the state. In March, 1838, the Governor approved a new act, reorganizing the survey and making more detailed provisions. In February, 1839, appeared Doctor Houghton's second annual report, which contained a report on zoölogy, entitled "A Systematic Catalogue of the Animals of the State, so far as observed," signed Abram Sager, state zoölogist. In the senate documents containing this report, I find a report on botany, signed John Wright, botanist of the Geological Survey. There seems no doubt that on the reorganization of the state survey, as above mentioned, Doctor Sager was relieved from the immediate charge of the botanical department. In March, 1840, a house committee recommended the repeal of that portion of the act establishing the geological survey, which pertained to botany and zoölogy, which was carried. Prior to this time, these two departments were suspended on account of the resignation of the officers in charge.

I cannot refrain from presenting the following certified statement found in the senate documents for 1838, and signed by Doctor Sager: "I hereby certify that I have received from Doctor Houghton, for the State of Michigan, the sum of $524.12, and that the whole sum has been faithfully expended for traveling expenses, while in the service of the state, and for other general purposes enumerated in the first item of the accompanying account, and also that no part of said sum has been applied in the shape of salary or otherwise for my private use." Let us hope that his salary, while in this service of the state, was more lucrative than this statement would lead us to infer.

As has been stated, Doctor Sager became a member of the faculty of the University of Michigan in 1842, assuming the duties of professor of zoölogy and botany. This position he filled until 1850. During the greater portion of this period, he was associated with Doctor Douglas. It is no disparagement to their colleagues of this period to say that these two physicians represented science and scientific thought at the then infant University, and the University as a whole might well honor them for putting its scientific activities on a firm foundation. We of the medical profession may well be proud of our achievements during the century we have just completed, especially proud of those achievements which have advanced the science and art of medicine. Let us not forget, however, that our influence on science has been still broader and that the pages of scientific literature, at home and abroad, contain many notable observations in pure science, penned by medical men, which the hand of Time has not and will not efface.

That Doctors Sager and Douglas were especially interested in the establishment of the Department of Medicine and Surgery has been stated. My endeavors to ascertain to what extent they were participants in this work have not been so fruitful as I should wish, as the earlier records of the University touching on this point deal mainly with results and not with the causes which engendered these results. In 1847, the Board of Regents appointed a committee, of which Doctor Zina Pitcher was chairman, whose duty it was to consider the expediency of organizing a medical department, and also to ascertain the expense that would of necessity be incurred, should such a step be taken. The records speak of communications received from the faculty, and the appointment of this committee may have been in response to such communications. In January of 1848, Doctor Pitcher made a favorable report, which, did time permit, might well be given in full. I trust I may be pardoned for making the following extract, which, I venture to say, expressed Doctor Sager's sentiments: "Without the establishment of a medical department, our professorship in zoölogy cannot adequately perform its functions. The human form, the highest in physical organization as well as in mental endowments, is made the standard to which comparative anatomists constantly refer."

A further report touching on the organization of a medical department was made to the Board of Regents in January, 1849, by a committee of three regents, with Doctors Sager and Douglas. This very full report, which deals with the subject of entrance requirements, length and character of the proposed course, and the requirements for graduation, is the only report seen to which the names of others than regents are added. Mention is here made of a printed report received from the faculty. This, I regret to say, has evaded my search. This and other reports were adopted by the Board of Regents; the erection of a medical building was determined upon, and Doctors Sager and Douglas were transferred to the medical school, the former as Professor of the Theory and Practice of Medicine, the latter as Professor of Materia Medica. In July, 1849, Doctor Moses Gunn was appointed Professor of Anatomy and Surgery, and in January, 1850, J. Adams Allen was appointed Professor of Pathology and Physiology, with Doctor Samuel Denton, Professor of the Theory and Practice of Physic, whereupon Doctor Sager was transferred to the Professorship of Obstetrics and Diseases of Women. In May, 1850, the medical faculty organized, choosing Doctor Sager as their president. On the first Wednesday in October, this school was opened by an address by the president.

Doctor Sager's connection with the Department of Medicine and Surgery covered a period of twenty-five years. He was thus in the University from 1842 to 1875, a faithful labor of thirty-three years. The late Professor Ford, for many years his colleague, has stated that "Doctor Sager's wealth of learning and wide medical scholarship and his eminent service in his department of instruction, did much to give character to the institution and to qualify many to do work which has largely blessed humanity and reflected honor upon his alma mater." A brief statement of the numerous positions occupied by Doctor Sager and so ably filled, while in the service of the University, will bear testimony to his wealth of learning and untiring industry. He was Professor of Zoölogy and Botany from 1842 to 1850; Professor of Obstetrics, Diseases of Women and Children, and Professor of Botany and Zoölogy, 1850-1854; Professor of Obstetrics, Physiology, Botany and Zoölogy, 1854-1855; Professor of Obstetrics and Physiology, 1855-1860; Professor of Obstetrics and Diseases of Women and Children from 1860 to 1875. Surely this was sufficient employment to occupy the energies of the most assiduous of workers. And yet we find that before coming to the University, and while in its service, he prepared an herbarium, which he gave to the University, and which is now known, or should be known as the Sager herbarium, containing about twelve hundred species and twelve thousand specimens; he collected and prepared many zoölogical preparations, the nucleus of the present University museum; he collected and prepared many specimens, illustrating comparative neurology, embryology, and craniology, at one time in the medical museum, and a collection of parasites found in man and other vertebrates was made by him. This formed the nucleus and represents the greater portion of the collection now in the pathological museum. Of the excellent collection of monstrosities now in the same museum, including human and other vertebrate forms, the greater portion, I am informed, dates from Doctor Sager's time. I must add that, while doing all this, he was a busy practitioner and *still* found time to prosecute original investigations.

It is stated that many of his students, and it seems that the same might truthfully be said of some of his colleagues, did not fully appreciate this man, who was truly imbued with the scientific spirit. By some of his students, his class room lectures were not valued as they should have been. In his lectures, Doctor Sager gave testimony of his broad scholarship and wide reading and we may readily comprehend the truth of the statement that now and then he was prone to dwell longer than necessary on details, which may have been, and no doubt were, irrelevant to the subject matter under discussion. I engaged in conversation, several years ago, an old alumnus of the Department of Medicine and Surgery of the University. In our conversation, I asked him to tell me something of his old teachers. In speaking of Doctor Sager, he dwelt especially on a series of lectures, extending through a period of about two weeks, in which his teacher spoke in great detail of observations he and others had made on the segmentation of frogs' eggs. He added that "at that time some of us did not see what that had to do with obstetrics and gynecology, but let me say," he concluded, "those lectures and many others which he delivered, gave us the only idea many of us had of what was going on in the animal world around us." I dare say that, could the testimony of other pupils of Doctor

Sager be obtained, we should find that the influence of this quiet, modest man has been like a benediction to them through their many years of labor. Truth, it matters not how gathered and how presented, will ever exert an influence for good.

Time does not permit an extended consideration of the contributions to scientific and medical literature made by Doctor Sager, nor could I consider it just merely to refer to them by title. I have permitted myself, therefore, to give you gleanings from certain of his published articles, and shall refer the interested reader for a fuller account of them to the original sources.

While in Detroit, in general practice, he published an article on American amphibia,[1] which was translated and republished in *Isis*, a German publication founded by Oken. In this article, he treats of the generic value of the arrangement and location of teeth in amphibia, and describes more fully certain American salamanders, noting several new species. In the "Proceedings of the Academy of Natural Sciences of Philadelphia,"[2] I find brief descriptions of three Myriapoda. In a paper entitled "Notes and Observations on Hirudenei Observed in Michigan,"[3] he describes somewhat fully several species of the two genera, Nephilis and Clepsine, observed in the vicinity. Of sufficient interest to bear repetition, appeared to me the following statement found in this article: "The ova of both genera, but especially of Clepsine, afford to the young embryologist a fine opportunity of studying segmentation of the yolk, the gradual histogenetic transformation and the final development of the organs, the stages of the process occupying three to four weeks." He tells us that in consequence of their transparency, these changes can be observed without the necessity of difficult anatomical manipulations. In an article entitled "Notes on the Anatomy of the Gymnopus Spiniferus,"[4] he gives the records made while dissecting this species of tortoise. This brief paper gives testimony of his wide knowledge of comparative anatomy and of his acquaintance with scientific literature; numerous references are given and critically discussed. Of the contributions seen, only one gives results of physiological experimentation. In this article,[5] he records the observations made in a somewhat extended series of experiments carried on in the physiological laboratory, on the respiration of cold- and warm-blooded animals, when caused to inhale "exciting, indifferent, and directly noxious gases." After detailing his experiments, he states that his results agree in the main with those obtained by Claude Bernard, although he questions the interpretation which this observer places on his results.

Doctor Sager's more strictly medical contributions are not numerous, although they might well be taken as examples worthy of emulation in their conciseness, clearness, and purity of diction. A "Report on Obstetrics,"[6] read by him at the annual meeting of the Michigan State Medical Society in 1868, gives a summary of the then recent contributions on this subject, with a discussion of the views put forth. "Extrauterine pregnancy, which may be regarded as the greatest error of nature—since the very act by which she seeks to produce a new being proves fatal to parent and progeny"—receives full consideration in this report,—which includes the record of a case observed by himself. In another paper, he records his findings in a unique and most rare specimen sent him, illustrating simultaneous intra- and extra-uterine pregnancy—"Case of Simultaneous Intra- and Extra-uterine Pregnancy."[7] One fetus was found in the uterus and the other in the left oviduct, both being apparently the same age. The abdominal opening of the right oviduct was found bridged over. In the right ovary were found two recent corpora lutea. The paper discussed in an interesting and instructive manner the probable course of the ova from the right ovary to the left tube, and the question of the formation of a reflexa in tubal pregnancy is considered, as also the question of the diagnosis of tubal pregnancy, previously recorded cases being cited. A further paper noted is entitled "Spasms of the Urethra and Bladder in Women,"[8] in which the etiology, symptomatology, diagnosis and treatment of the condition are discussed.

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[1] *American Journal of Science*, Volume XXXIV, 1839.

[2] Volume VIII, 1856.

[3] *Peninsular Journal of Medicine*, Volume IV, 1857.

[4] *Peninsular Journal of Medicine*, Volume III, 1856.

[5] "Experiments on the Respiration of Various Gases," *Michigan University Medical Journal*, Volume I, 1870.

That Doctor Sager was not only a scientist and teacher, but also a bold and skillful surgeon, we may learn from his report of a "Cæsarean Section,"[9] performed by him in the University Hospital, one of the first, perhaps the first, in this region. The case was that of a small rachitic woman, thirty-five years of age, and nine months pregnant when seen. Examination of the pelvis revealed a condition which precluded any other procedure than that of Cæsarean section. He was assisted in this operation by Doctors Ford, Cheever and Frothingham. The steps of the operation are detailed and the statement is made that prior to the operation the placenta was located by the placental murmur and avoided during the incisions. The wound in the uterus was closed by four silver sutures, the abdominal wound with hairlip sutures and superficial silk sutures. The patient expired eighteen hours after the operation. In this connection, he discusses the causes of death from Cæsarean section, and gives reasons for the steps of the operation as practiced by him; especially does he deem it necessary to justify the procedure of suturing the uterus. A discussion of the pelvis, which was obtained, follows, and the figures, as well as the measurements given, show it to have been one of the most markedly deformed pelves on record. May I add the following extract, on the one hand his estimate of one of his confreres, on the other, his feeling toward charlatanism: "From a survey of the above measurements, it is believed that an accoucheur with even the skill, dexterity and boldness of Doctor Barnes, would not for a moment feel justified in electing any other operation at full term of gestation. But it is understood that our patient solicited the aid of a charlatan during the first two or three months of pregnancy, when undoubtedly she might have been justifiably relieved of her perilous condition; but with the usual inhuman selfishness of his class, after securing her fee, he abandoned her to her fate."

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[6] Published privately in 1869 at Ann Arbor.

[7] *Michigan University Medical Journal*, Volume I, 1870.

[8] *Michigan University Medical Journal*, Volume III, 1872.

[9] *Michigan University Medical Journal*, Volume II, 1871.

In glancing through the volumes of the medical periodicals of the beginning of the last half century, I frequently met with translations and abstracts from foreign periodicals signed by Abram Sager. The subjects thus reviewed embraced nearly every department of medicine. There is an Arabic expression which says that "Each foreign tongue equals a man;" that is to say, if an individual knows three tongues, then he is worth three men knowing one tongue. That in his reading Doctor Sager was equal to three men is evident from his frequent references to foreign literature as well as from the reviews and abstracts above referred to. Reading was his delight and recreation. That he read critically we may learn from the fact that the margins of his books and monographs were full of queries and annotations.

It is to be regretted that many of his researches, especially those bearing on comparative anatomy, were never published. That he left much unpublished work, I gather from statements made by one of his family. For many years after his death, a large number of note books, filled with closely written pages and containing many drawings, were periodically taken from their silent resting place, freed from the dust which, like a shroud, enclothed them, and then allowed to await another resurrection. Now their abiding place is unknown. We are thus impoverished by the fact that even he, who used the hours to such good purpose, did not find time to complete all that he had undertaken.

Doctor Sager was a member of the American Association for the Advancement of Science; of the Academy of Natural Sciences of Philadelphia; of the Academy of Sciences of New Orleans; and of the Academy of Sciences of Chicago. He was one of the first of Michigan physicians to become a member of the American Medical Association. He was a member of the New York State Medical Society; of the Michigan State Medical Society; and of the Obstetrical Society of Philadelphia. His modesty and retiring disposition were incompatible with his becoming a prominent factor in any of the societies of which he was a member. It is said that when present at any such gathering, he was usually found occupying an inconspicuous place in the rear of the room, few members becoming aware of his presence.

Doctor Sager was, however, not only an investigator and teacher, but also a most skillful practitioner. His wide reading, his scientifically trained mind and his cautious temperament combined to make him a skillful diagnostician and to give him versatility of resources in treatment. For many years he had a large general practice in this locality (Ann Arbor) and many of the older residents speak reverently of his skill and of his kindly manner with the sick. His learning and his ability as a diagnostician were recognized and appreciated by his professional brethren, who often sought his services in consultation and in these relations he was an exemplar of professional honor, devotion, fidelity and learning. One of his professional brethren writes as follows: "Doctor Sager was to those who enjoyed that privilege, a model consulting physician, who apparently did not deem such an occasion the opportunity for airing his erudition in a clinical lecture to a lay audience, nor that the interest of either attending physician or the patient need be injured in protecting both." The esteem in which he was held by his fellow citizens is shown by the fact that for many years he was a member of the board of education of this city and for a number of years its president.

During the last few years of his life, Doctor Sager was afflicted with pulmonary tuberculosis. In 1875, he obtained leave of absence and spent the winter in Florida and South Carolina, returning in the spring temporarily relieved and looking forward to several years of active strife. These hopes were, however, not realized. In 1874, by reason of illness, he found it necessary to lay aside the harness which he had worn so long and to give up all attempts at teaching. The regents conferred upon him the title of emeritus professor and he remained as dean of the medical faculty until June, 1875, when he felt obliged to sever all connection with the University. "He recognized the character of his illness and was left without the hope of recovery with which the unprofessional patient may beguile himself. Yet, while he awaited the inevitable encroachment of the disease in cheerful resignation, his characteristic industry in the study of general and medical science and literature was exhibited to the last and his interest in all that pertained to the good of the profession remained unabated." Renal disease with albuminuria developed during the last years of his life, and his death, which occurred August 6, 1877, was precipitated by an attack of dysentery.

It has just been stated that Doctor Sager felt compelled to sever all connection with the University in June, 1875. This was owing to the fact that in that year a Department of Homeopathy was established in connection with the Department of Medicine and Surgery. My brief allusion to this subject is prompted by a desire to place before the reader one phase of Doctor Sager's character, not generally mentioned. His modesty and his gentleness toward all with whom he came in contact are worthy of commendation; that he was positive and self-assertive when his principles were at stake is, I believe, equally true. His keen sense of honor, his abhorrence of all which savored to him of quackery and charlatanism, his condemnation of all pretense and his desire to protect and in every way further the interest of the profession of which he was a member, prompted him in assuming the position which he held. His letters bearing on this subject, published before and after his resignation, as well as his letter of resignation, which appeared in the *Detroit Review of Medicine* (1873), give evidence of this fact. In the letter of resignation, he clearly and with dignity states his position, which is expressed in the following paragraphs taken from the letter: "I have ever held that fealty to my profession was primary and paramount to every other consideration." And again, "It becomes me to show that the question where my paramount allegiance is due is not controlled by dollars and cents, but rests upon much higher considerations."

That the stand taken by Doctor Sager received the endorsement of the profession of the state is shown by the fact that he was unanimously elected president of the Michigan State Medical Society in 1876. The minutes of the May meeting in 1877, show that he was unable to perform this duty by reason of severe illness.

Such in brief was the life of the man, whose industry, scholarship, love of truth, and devotion to his profession we commemorate. The lessons of such a life are often taught, yet often unheeded. May I, in closing, ask attention especially to one of these lessons. That we of today have a science and art of healing and not a mass of superstition is owing to the persistent toil and patient labors of many men. Men, who with test-tubes in hand, with the scalpel or with the microscope, with battery and induction coil, have spent many hours in searching after truth. The facts thus gathered form the foundation—the scientific basis—upon which has been built the art of healing. Many are the stones, often gathered from distant and unknown quarries, which have found a useful place in this structure, seemingly nearing completion but yet in process of erection and never to be finished. The architect we are here considering has shown us that building material worthy of a place in this structure will be found about us, if we are but faithful in our search, it matters not where our location nor how unpromising the field; and that every quarry, though long in use, perhaps even abandoned, contains some stone, which, when subjected to skillful treatment, will fill a niche awaiting its reception.

It has been my purpose to show that in every department engaging Doctor Sager's attention, he found time and means to extend the then known; and we must remember that as student he had not the training and opportunities at the disposal of the present, and as teacher no equipped laboratories and no library facilities. "The fact that he accomplished so much under great difficulties may cheer some of us in carrying our burdens, which at times grow exceedingly heavy, and may lead some of our younger members to realize that it is the duty, as it should be the pleasure of every medical man, however limited his facilities may be, to add something to the sum of that knowledge which surpasses all others, inasmuch as it is utilized in the saving of human lives." This quotation, so applicable here, is from a presidential address delivered by Doctor Victor C. Vaughan "On the Life and

Services of William Beaumont,"[10] another of Michigan's pioneer scientists, whose great services in the development of physiological knowledge will ever be remembered.

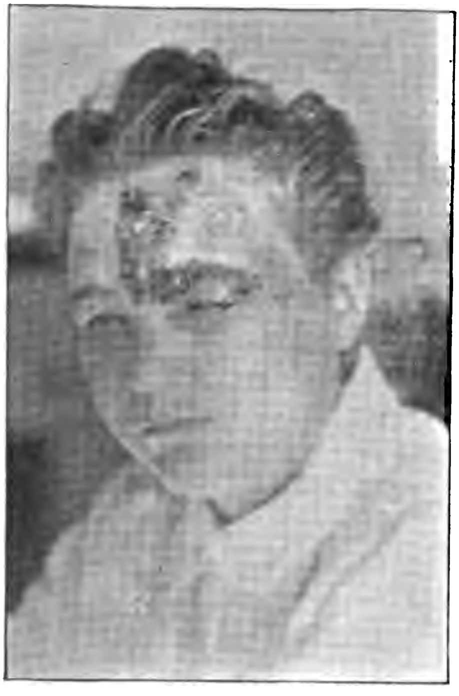
May I, in conclusion, make use of the closing sentence of one who wrote briefly of Doctor Sager's life many years ago, one who was permitted to know and who delights to honor him, Doctor William F. Breakey: "His life teaches us that the success and fame most desired and enduring are achieved by straightforward, honest means, and by persistent effort; that devotion to truth, to scientific research, to the development of rational medicine, without pretentiousness, without quackish art, with fidelity to obligations, brings its rewards in the esteem and commendation of professional brethren, the confidence and honor of the public and the gratitude of patients."

TWO INTERESTING CASES.

DAVID MURRAY COWIE, M. D., ANN ARBOR, MICHIGAN.
FIRST ASSISTANT IN MEDICINE IN THE UNIVERSITY OF MICHIGAN.

I.—HERPES ZOSTER HEMORRHAGICA (TRIGEMINAL).

MONDAY, December 7, 1903, Miss O. was taken ill with shooting pains and burning in the left side of the forehead and left ear. These symptoms continued and were aggravated by exposure to cold air, being particularly severe between the eyes at the base of the nose, until Thursday, the 10th, when two red lines were noticed on the forehead, one in the median line corresponding to the distribution of the supratrochlear branch of the frontal nerve, and the other running at an angle of about twenty degrees to the left of the median line and corresponding to the distribution of the supraorbital branch. Friday, the 11th, a small clear vesicle with reddened areola appeared between the eyes. Saturday, the 12th, the entire reddened lines were studded with similar clear vesicles varying in size from a pinhead and smaller to that of a small pea. A more or less diffuse red line crowned with small vesicles was now visible along the course of the left eyebrow. There was general swelling of the tissues in close proximity to the lesions and a more or less genuine



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[10] "Transactions of the Michigan State Medical Society, 1896".

redness superseded the primary red lines. On the following day, the 13th, the vesicles began to spread and coalesce; and the swelling became so intense that the left eye was practically closed. The right upper eyelid was edematous, and the entire forehead and the left cheek were much swollen, so much so that the patient's countenance could not be recognized. The posterior cervical glands from behind the ear to the cervical vertebræ were distinctly enlarged. The anterior glands were not affected. Pressure with the finger increased the pain and the burning all over the left side of the head but not beyond the median line. The vesicles had now coalesced so as to form large blebs, the largest of which was undergoing a hemorrhagic change and assuming a deep purple color. This hemorrhagic change soon developed in most of the vesicles and blebs. The fluid that escaped after pricking the vesicles was of a turbid, brownish color, in contradistinction to the clear fluid in the earlier stages of the eruption. During the entire course of the disease the temperature did not exceed 100° and was rarely above 99°. The pulse was always normal.

The patient was discharged from private hospital December 25. Most of the vesicles at this time had crusted but none detached for many days after.

The case is reported because of its severity, its hemorrhagic character, and the beautiful development of the lesions, and because, although the eruption was extensive, it bears out the classic description inasmuch as it is purely of trigeminal origin. The involvement of the posterior cervical lymphatics is in all probability of trigeminal origin and is in no way connected with an associated involvement of the second, third and fourth cervical nerves. This, of course, is open to question.

Result.—There was marked scarring and redness all along the course of the lesions, for three or four months. The more superficial lesions in this time had, however, almost completely filled in. The lower and deeper lesions at the present time (October, 1904) show distinct pitting but appear to be getting less noticeable. The return to normal was slower than would have been the case had the patient been willing to leave off the handkerchief bandage which she persisted in wearing for months.

Treatment.—An ointment of ichthyol—twenty-five per cent—with lanolin, and bichlorid compresses—one to four thousand and one to one thousand—gave the greatest relief. The bichlorid was used after the coalescing of the vesicles and served a two-fold purpose—to lessen the burning and to prevent infection that might take place through a ruptured vesicle.

* * *

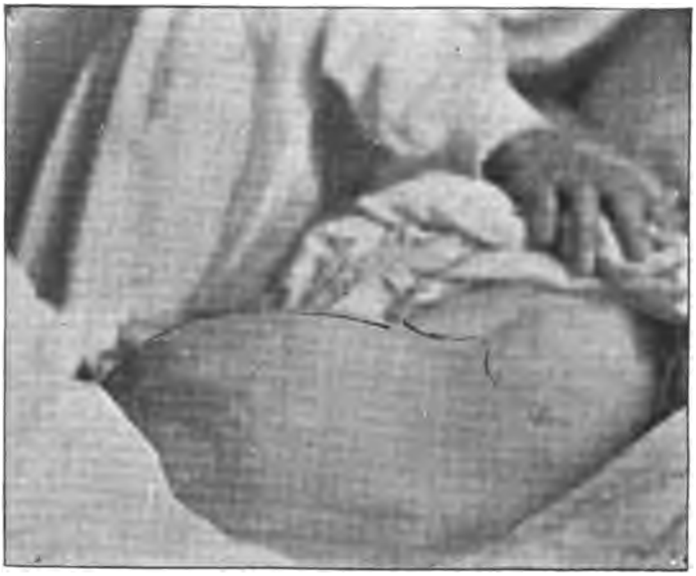
II.—DILATATION OF THE BLADDER.

Miss H., aged sixty, entered private hospital January 10, 1904. She came to Ann Arbor, complaining of incontinence of urine, abdominal tumor, cough and expectoration. The case is reported because of the abdominal condition. It will only be necessary to state that the patient had extensive tuberculous involvement of both lungs.

The woman had complained of incontinence for some months and had been getting worse just before coming to Ann Arbor. This was a source of great discomfort to her and those who cared for her, as her clothes and bedding were continually soaked with urine and the external parts had become much irritated.

The character of the tumor at the time of my first inspection was so suggestive of more than one condition that for fear I might destroy its appearance by examination I deferred this until the patient had been photographed.

The patient was a cachectic, miserable-looking individual, of slender and stooped frame, wasted muscles and sallow, wrinkled skin. The abdomen was markedly above the level of the ribs and symmetrical. The greatest fullness was below the umbilicus, although, as will be seen by the illustration, the epigastrium was very full. The enlargement was about that of the fifth and sixth months of pregnancy. On palpation the area at and below the umbilicus had the rubber-bag feel of a dilated stomach. There was no succussion.



After withdrawing two quarts and half a pint of clear dark-yellow urine the tumor and the incontinence disappeared. The abdomen was now flabby. There was considerable gas in the bowels. Rectal and vaginal examination showed the uterus to be a little enlarged instead of reduced in size, but it was apparently not of sufficient size to cause obstruction. Examination of urine was absolutely negative—no tubercle bacilli could be found.

The condition was thought to be due to progressive atony of the bladder.

The patient was catheterized three times daily for a week, after which she was taught to perform the operation under sterile conditions herself. The irritation of the external parts soon disappeared as a result of anointing with oil. She was given one-thirtieth grain of strychnine sulphate *ter in die,* with the hope that it would benefit the atony of the bladder walls.

I am informed that the patient has fully recovered from these symptoms and has not been obliged to use the catheter for some time. She has been led to believe, I am also informed, that she has no consumption. However, the patient's sputum was laden with tubercle bacilli.

The danger from such cases is ascending infection. While the urine is flowing down the ureters infection of the ureters and kidneys is unlikely to occur, but when, on the other hand, the bladder is full, there is stemming of the flow in the ureters and regurgitation may occur. If bacteria have entered the bladder they may now reach the kidney without resistance.

As this patient entered hospital with a hopeless prognosis regarding the abdominal tumor, whose nature was undetermined, I would exhort practitioners to bear this case in mind and when everything else fails try the catheter.

A REPORT OF A CASE OF CARIES OF PART OF THE TEMPORAL BONE, WITH A DEEP ABSCESS OF THE NECK.

By EMIL AMBERG, M. D., Detroit, Michigan.

On July 14, 1904, I was called by the attending physician to see a man thirty-nine years old, who informed me that he had suffered for about three weeks from severe pain in the left side of his head. Patient gave the impression of being very sick.

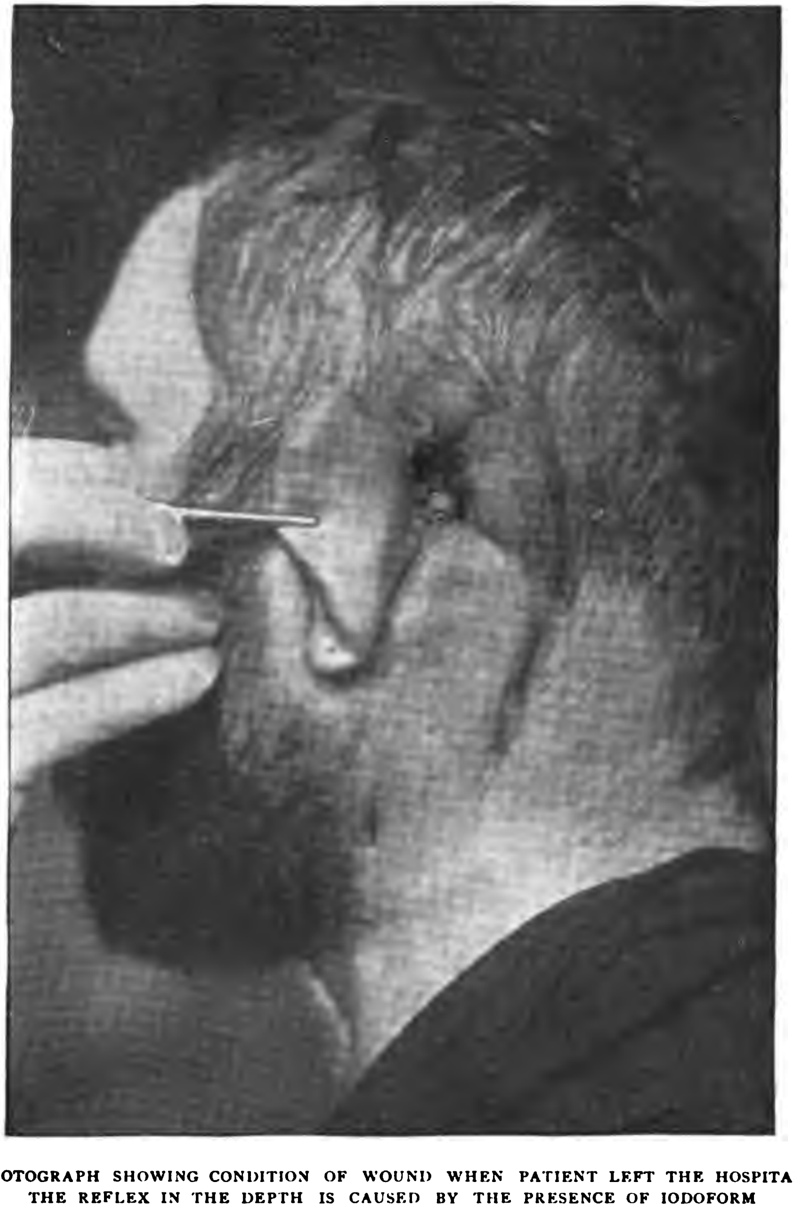
Local examination revealed the meatus acusticus externus bulging and other symptoms of mastoiditis, also infiltration of the subcutaneous tissue around the mastoid and especially below the same. Patient was sent for operation to Saint Mary's Hospital the same day.

Paracentesis was performed July 15, the knife perforating an apparently healthy drum membrane. Upon incision behind the auricle in the customary place a large quantity of pus escaped. The mastoid was opened and carious bone removed. Patient did very well after the operation and, upon his urgent request, was allowed to be discharged on July 23.

I saw the patient again in my office July 29. He said that on July 24 he began to suffer with intense pain in the left side of his head. He was sent to Saint Mary's Hospital July 29.

July 29, 4 P. M.—Temperature (by mouth), 99.8°; pulse, 92; respiration, 26. The patient was antiseptically prepared for operation. He was suffering very great pain and at 7 P. M. one grain of codein was administered, which was reinforced at 7:30 P. M. by one-quarter grain of morphia sulphate given hypodermically.

July 30, 6 A. M.—Patient had a chill, which lasted twenty minutes. 7 A. M.—Temperature, 98.6° ; pulse, 72 ; respiration, 24. Patient perspiring freely. 10:30—One-eighth grain of morphia sulphate administered hypodermically. Operation performed at 10:30.



PHOTOGRAPH SHOWING CONDITION OF WOUND WHEN PATIENT LEFT THE HOSPITAL. THE REFLEX IN THE DEPTH IS CAUSED BY THE PRESENCE OF IODOFORM POWDER. THE WOUND IS NOT ENTIRELY COVERED BY EPIDERMIS.

Photograph by Doctor Preston M. Hickey.

The operation contemplated opening the mastoid antrum. No pus was found in this cavity. The dura was incidentally exposed above and somewhat backward of the posterior upper border of the outer ear canal. The surface of exposed dura measured about one-quarter to one-fifth of an inch. Patient was conscious and resting quietly at 2 P. M., but vomited at 3:30 P. M., becoming nauseated again at 5:30. He complained of severe pain in his head at 6:30 P. M., and vomited some green fluid. One-quarter grain of morphia sulphate was administered hypodermically at 10 P. M.

July 31, 4 A. M.—Patient slept greater part of night; vomited several times during fore part of night. Temperature, 99.4°; pulse, 76; respiration, 22. 7 A. M.—Temperature, 99.4°. 11:30 A. M.—Temperature, 98.6°. 4 P. M.—Temperature, 98.8°. 6:30 P. M.—Vomited two ounces.

August 1, 4 P. M.—Temperature, 99.6°.

August 2, 4 P. M.—Temperature, 98°; pulse, 64; respiration, 20. Light breakfast; light dinner; light supper. Complains of some pain in head.

August 5, 4 P M.—Temperature, 99°.

August 6.—Complains of pain in head during the night. 4 P. M.—Temperature, 98.2°. 7 P. M.—Temperature, 99.4°.

August 7.—Patient rested well during the night. Appetite fairly good. Outer dressing changed. 7 P. M.—Temperature, 100.4°; pulse, 80.

August 8.—Dressing renewed. 4 P. M.—Temperature, 100.9°; pulse, 84; respiration, 30. 7 P. M.—Temperature, 101.2°; pulse, 82; respiration, 32.

August 9.—Patient's appetite is poor. He perspired freely during the night. Again brought to operating room at 11:20 A. M. The rise in temperature, the perspiration, the subjective complaints of the patient, his septic appearance and the sensation of throbbing in the wound cavity made it probable that there might be a complication.

Assisted by Doctors B. W. Pasternacki and Charles McLean, I removed still greater portions of the mastoid bone than I did at the previous operation, incidentally laying bare another part of the dura of the cerebrum at a point about three-quarters of an inch behind the meatus to an extent of about one-quarter of an inch in surface diameters. The dura appeared healthy. The dura of the cerebellum was also laid bare to a surface extent of about five-eighths of an inch in length and about one-quarter of an inch in width. It appeared to be healthy. The lateral sinus was exposed to a small extent. It appeared to the eye and to touch to be perfectly normal. The bone, especially toward the cerebellum, seemed to be very soft and decayed.

The patient was returned to the ward still unconscious and suffering from a severe attack of singultus. As I had packed the large wound cavity rather tightly, I removed the dressing immediately and replaced it less tightly, without influencing the severity of the attack of singultus, which, however, disappeared after the patient had vomited some coffee which he had taken not long before the operation.

August 9, 2:30 P. M.—Fully conscious. 4 P. M.—Temperature, 97.8°; pulse, 80; respiration, 30. 4:30 P. M.—Singultus. 5 P. M.—Vomited about two ounces. Slept about one hour. 6:15 P. M.—Perspiring freely. 7 P. M.—Resting quietly.

August 10.—Patient rested well at night. Had frequent drinks of cold water. 2 P. M.—Temperature, 99.9°. 4 P. M.—Temperature, 100°. Light supper. 7 P. M.—Temperature, 100°. Slept a couple of hours. Perspiring freely. Complains of pain in his head.

August 11.—Passed a comfortable night. Appetite good. 2 P. M.—Temperature, 99.4°. 4 P. M.—Temperature, 99.4°. 7 P. M.—Temperature, 100.4°.

August 12.—Patient had a chill during the night, followed by free perspiration. 2 P. M.—Temperature, 99.6°; pulse, 70. 4:15 P. M.—Temperature, 100.2°; pulse, 76. 6:45 P. M.—Temperature, 100.6°; pulse, 80.

August 13.—Did not rest well during the night. Appetite good. 7 A. M.—Temperature, 97.8°; pulse, 66. While examining patient, who complained of having had another chill, it was more evident than at any other time that the point of great tenderness was not any longer in the immediate neighborhood of the remnants of the mastoid process but about one inch below. The throbbing in the wound cavity had also disappeared. Furthermore, it appeared that the greatest pain on touch was suffered by deep pressure directly over the sterno-cleido-mastoid muscle, whereas there was very little pain, if any, when pressure was exerted in front of the sterno-cleido mastoid muscle directly backward. It appeared pretty clearly that within the region of the temporal bone there was very little left which might cause the pyemic character of the temperature. I came to the conclusion that there was a deep abscess of the neck which was eating its way downward toward the mediastinum. 2:30 P. M.—Temperature, 99.4°. Doctor Ballin had the kindness to see the patient with me in consultation at 5 o'clock in the afternoon, confirming my diagnosis. The patient was placed under the influence of nitrous oxide gas by Doctor Straith, and Doctor Ballin opened the abscess, incising about one inch below the mastoid, behind the sterno-cleido muscle, evacuating about three-quarters of an ounce of pus, which was found to come from below the deep fascia of the neck. Patient was returned, conscious, from the operating room suffering intense pain. 4:45 P. M.—One-eighth grain of morphia sulphate was given by mouth, and repeated at 6:05 P. M., patient objecting to the administration hypodermically. 6:30 P. M.—Temperature, 98.6°.

August 14.—Patient slept well all night. Slept several hours this morning. Appetite good. Passed a comfortable afternoon. 7 P. M.—Temperature, 99.4°.

August 15.—Slept well during the night and spent a comfortable day.

August 17.—Dressing in wound on neck renewed.

August 19.—Patient passed a comfortable night. Dressings renewed in temporal bone wound and neck wound.

August 22.—Patient was up a couple of hours this afternoon.

August 23.—Patient was up this afternoon walking about.

August 24.—Patient tells me that he feels better today than he has felt for many months. The expression in his face is entirely changed and more cheerful; color healthy.

August 25.—Patient was up all day.

September 10.—Patient perspired freely during the night. 10 A. M.—Temperature, 99°; pulse, 82. 1 P. M.—Temperature, 99°; pulse, 82. Doctor Ballin operated again about 5 P. M. Chloroform anesthesia. A pocket in the depth was opened through the former incision in the neck and about one drachm of greenish pus released. The carotid could be felt pulsating at the bottom of the abscess. The opening in the skin was enlarged, making it in all about one and one-half inches long. In front of the sterno-cleido-mastoid muscle, at a distance of about one and one-half to two inches from the first incision, obliquely downward a counter opening was made. A rubber drainage tube about two and one-half inches long and about one-third inch in diameter was inserted through the lower opening under the sterno-cleido-mastoid muscle. The other opening behind the sterno-cleido-mastoid muscle was packed with iodoform gauze.

September 11, 1 P. M.—Temperature, 99°. 4 P. M.—Temperature, 100.4°. 7 P. M.—Temperature, 100.4°. 10:20 P. M.—Temperature, 100°.

September 12, 10 A. M.—Temperature, 97.6°. 1:30 P. M.—Temperature, 98.8°. 4 P. M.—Temperature, 99°. Patient was up and around this afternoon.

September 13.—At 7, 11 A. M. and 1:30, 4 and 7 P. M.—Temperature, respectively, 98.6°, 98.2°, 98.6°, 98°, 98°.

The drainage tube was left in the wound for about five days and then replaced by iodoform gauze, which was changed about every second day until September 26, 1904, when the wound did not require packing any longer.

The wound cavity in the temporal bone was powdered with iodoform powder and dressed with iodoform gauze about every third day. Patient left Saint Mary's Hospital September 30, practically well, and showing the condition represented by the picture illustrating this paper.

November 7.—Wound entirely healed. Patient well.

REMARKS.

The extensive destruction of part of the temporal bone must be attributed to the long-standing of the affection. Patient cannot give an exact account of his disease. He says, however, that his wife told him his trouble started about last Christmas.

I have observed, not only in this case, that some patients suffering from painful affections in the ear cannot give a reliable account of their disease. Another of my patients during her convalescence after an operation had expressed, afterwards, surprise at her mental state. In all probability we have before us a condition of intoxication and exhaustion exactly corresponding to that of which Kraepelin speaks in his text-book. *

The course of temperature in the case reported was not entirely in harmony with the suffering of this patient nor with the pathological changes, in so far as their possible consequences were concerned. Little doubt can be entertained that the process would soon have extended farther down into the mediastinum.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, OCTOBER, 4, 1904.

THE PRESIDENT, DANIEL S. DOUGHERTY, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

THE paper of the evening was read by Doctor Milton Franklin, his subject being "The Finsen Method." He said in part, that the original Finsen lamp possessed many imperfections in principle and construction. The time necessary for the treatments, and the amount of current consumed were large. From the first, there were efforts made to improve the apparatus and thus lessen the time and current consumed. Among the most important of the lamps offered for this purpose were those of Bang, Lortet, Genoud and Professor Piffard. The first made use of a small iron arc of about three amperes capacity and placed at a few centimeters from the skin. The second consisted of an ordinary carbon arc of about fifteen amperes capacity, placed near the skin and separated from it by a layer of water between two layers of rock crystal. The lamp of Piffard made use of a series of spark-gaps between small iron spheres and gave the best known ultraviolet spectrum. In all of these lamps a superficial cutaneous reaction could be obtained in less time than with the larger Finsen lamp, five minutes often sufficing with the last named.

In spite of all these improvements, the method had steadily lost favor, until, it has been abandoned in many places. The author, while abroad recently, made a study of the method in the Finsen Institute, and comes to the conclusion that lost interest in the method is due to the efforts of ignorant experimenters to improve it. In many cases the apparatus was wholly inadequate and based on false physical assumptions. Also, many persons attempted to invade all fields of

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* See "Psychiatry," 1896, page 25: Professor Doctor Emil Kraepelin.

therapeutics with the light and failed, giving the impression that the method was not a success.

Finsen claimed for the method only that it would cure lupus vulgaris if properly applied and that the cosmetic effects would surpass those of any other known method. These claims were amply substantiated in the Finsen Institute and the method when kept within its proper sphere is a perfect success. Of the other lamps that have been tried, that of Piffard is the most successful and can be said to surpass that of Finsen in treating superficial conditions, such as lupus erythematosus.

DISCUSSION.

Doctor Dennis J. McDonald asked, in discussing the paper, whether there was not in use in this country a lamp of Professor Piffard's that produced a deep burn. He also asked whether there was no way, other than using the arc lamp, to obtain the same amount of disbursement and the same quantity of the rays.

Doctor Franklin, in closing the discussion, said that it was impossible to get a deep burn with any lamp other than Professor Finsen's, but some remarkable results in superficial cases had been produced by Professor Piffard's lamp. He also said that it was absolutely necessary to use a large lamp.

REPORTS OF CASES.

HODGKIN'S DISEASE, OR PSEUDOLEUKEMIA.

Doctor William G. Eckstein: I wish to present a case of Hodgkin's disease or pseudoleukemia. The patient is a male, twenty-two years of age. Family history is good, parents, brothers, and sisters being alive. Childhood history is uneventful. The present complaint began twenty months ago with a slight swelling over the right side of the neck, which swelling gradually increased in size. Shortly after the appearance of the swelling on the right side, a similar swelling developed on the left side of the neck. A diagnosis of pseudoleukemia was made, and the patient was admitted to Mount Sinai Hospital and was treated with arsenic, but did not improve greatly. Applications of Roentgen rays caused the tumor to diminish in size. Now, he presents a typical condition of Hodgkin's disease from the standpoint of history and examination. He has enlarged glands of the neck and groins and slightly enlarged spleen, and has been subject to a series of recurrent paroxysmal attacks of fever which are characteristic of this condition. His blood has been examined several times, but with negative results.

DISCUSSION.

Doctor Albert Kohn: This patient's condition very remarkedly resembles sarcoma. In my opinion, it is impossible, at the present time, to differentiate positively between Hodgkin's disease, tuberculosis of glands, and lymphosarcoma. The patient under discussion has marked glandular enlargement and enlargement of the spleen; but there is another class of cases that have neither of these symptoms, but have enlargement of the glands of the abdomen and thorax, and this class is the more important, because of the difficulty of diagnosis. This class of cases is also more prone to hemorrhage. A factor which has not yet been explained is why the internal enlargements should be more prone to hemorrhage than those enlargements that can be seen and felt. The symptoms of this class of cases are due to pressure: pressure upon the nerves, the blood-vessels, and the breathing apparatus, and this may aid greatly in the diagnosis. The blood tests are negative unless a division is made on the basis of lymphocytes and multinuclear leukocytes; then the cases go over the border line to leukemia, and in my opinion this is not justifiable. A piece of the gland may be excised for purposes of positive diagnosis, but, in the case of lymphosarcoma, for instance, this proceeding has been followed by a rapid spread of the disease. Treatment with arsenic has been followed with some degree of success, but treatment with the Roentgen rays has been followed by some surprising results. I recall one patient who submitted to this treatment for about five weeks, and his mass had shrunk most remarkably. Another patient had a mass in the left axilla which was treated with the rays, and it diminished in size very perceptibly. The treatment has not yet been given a sufficient trial to determine whether it affects the process of the disease other than by shrinking the tumorous masses.

Doctor Milton Franklin: A patient has been referred to me, suffering from glandular enlargements, of which no definite diagnosis has been made. I wished to use the Roentgen rays, but when I explained to the patient that while the enlargements might diminish by shrinking, there might also be some sloughing, the patient refused to submit to any danger of the latter process. The high frequency current was used as a substitute for the rays, and the growths began to disappear very rapidly. The symptoms were in all respects those of Hodgkin's disease, and as the enlargements had been present during the patient's entire lifetime, by all precedent he should have been dead. He stopped coming for treatment, and I do not know his condition at the present time.

Doctor Brooks H. Wells: I have been acquainted for many years with the patient to whom Doctor Franklin referred. When a young man, some one suggested that the enlargement of his glands might be due to syphilis, and he was accordingly put on antisyphilitic treatment for some time, but without results. The growths have diminished so markedly under Doctor Franklin's treatment that the result is noticeable, even in his appearance on the street.

Doctor Eckstein: Doctor Flexner has described a cell incision found in two cases, which he thought explained the disease as being infectious. Undoubtedly the disease belongs to the class of infected granulomata. It is not difficult for me to understand the good effects of the Roentgen rays on the separate tumors, but I am unable to conceive of the *x*-ray benefiting the general process. In this case, even with the improvement shown, I regard the prognosis as bad.

POSTMORTEM SPECIMENS OF PUNCTURED INTESTINE

Doctor John A. Bodine: This is a specimen of intestine which has been completely cut in two by a wagon wheel passing over the abdomen. The patient came into the hospital stating that he was struck in the side by a moving wagon wheel. Examination of the abdomen superficially by the House Surgeon showed no bruise, and as the patient had a normal temperature and normal pulse, without sign of shock, he was permitted to go to bed with a sedative dose of medicine. During the night he arose and went to the toilet, returned to bed, and was dead in two hours. Subsequent investigation of the case developed the fact that the wagon wheel of a loaded furniture van passed directly across his abdomen at the level of the umbilicus, after which accident he walked to his home, some two blocks, and up two flights of stairs, said to his wife that he felt nauseated and decided to go to the hospital for treatment. He walked this distance, about a half mile, and walked up three flights of stairs to the ward. After examination by the House Surgeon he was put to bed, and during the night arose as stated to go to the toilet, but whether the bowels moved or not we are unable to state. After his return his collapse was so sudden, and his death followed so rapidly as to preclude the possibility of any surgery.

DISCUSSION.

Doctor Albert Kohn: I recall a patient who had been kicked in the abdomen by a horse. The surgeon who examined him immediately afterwards said there was nothing but a contusion of the muscles. At 7 o'clock the same evening, when first seen by me, he appeared ill, had an expression of pain, and looked as if he were suffering from some lesion. There was no temperature and the pulse was rapid (110) but on examining the abdomen there was a slight tenderness over the right iliac fossa, and in percussion an area of dullness extended around the edge of the right iliac fossa. A diagnosis of perforation of the gut was made and confirmed by Doctor Morris Manges, but the surgeon who had first seen the case claimed that the symptoms did not warrant this diagnosis. However, the patient was sent to the Presbyterian Hospital, where he was operated on at once, and an immense rent in the large intestine was sewed up, the patient recovering uneventfully.

Doctor Brooks H. Wells: In my opinion an exploratory operation should be performed in all cases of crushing injury to the abdomen at the first sign of shock.

Doctor Hayes: While I was House Surgeon at the New York Hospital, a patient was admitted who had a small stab wound below the border of the ribs, on the right hand side. There seemed no marked necessity for operation, but when an exploratory incision was made, it was found that the wound had penetrated the intestine.

OPEN OPERATION FOR CORRECTION OF DEFORMITY AND RESTORATION OF FUNCTION IN ANCIENT COLLES' FRACTURE.

Doctor John A. Bodine: I wish to present a nine-years-old boy on whom I operated for Colles' fracture of two months' standing.

Before the operation the patient had no abdunction, no adduction, hyperextension, flexion, pronation nor supination at the wrist. There was a typical silver-fork deformity of an unreduced Colles' fracture. Operation was advised and performed. I desire to thank Doctor Dawbarn for inspiration in this operation. It differed, however, in the site of the incision, which was placed upon the dorsum of the wrist, instead of the radial side. The reason for this deviation from the original technique recommended by Doctor Dawbarn lies in the uncertainty of the position of the radial nerve, which turns from the front of the arm to the dorsum somewhere along the lower third, but this is as definitely as it can be placed; and in my opinion there is less danger of wounding it if the course of the nerve is paralleled by the incision on the dorsum than in crossing the course of the nerve on the radial side of the bone. After driving a chisel into the site of the fracture and refracturing the bone, it is treated as a recent Colles' fracture. This case, which was operated on five weeks ago, has every single wrist motion, the deformity being almost entirely gone. I have now treated nine cases with this method, and have had universally satisfactory results.

The second case I wish to present is that of a man, thirty years of age, with a typical Colles' fracture, as shown by the cast taken of the arm previous to the operation. The man had limitation of motion in all directions at the wrist-joint. The unreduced fragment was chiseled free, and upon placing the hand in a straight line, so as to do away with its radial flexion, it was found that the gap was too wide, so the plan recommended by Doctor Dawbarn was followed, and half an inch was cut from the ulna midway between the wrist and elbow, thereby setting the hole hand back that distance. The wound closed, and after the usual treatment the patient recovered with perfect restoration of function and reduction of deformity.

As to the after-treatment, the pistol-shaped splint devised by Volkman, to be applied to the posterior surface of the arm is logical and to be recommended, but this splint is not always on hand when the surgeon is called to treat the lesion. A much simpler and more effective method is that devised by the late Professor Van Arsdale, consisting of a straight piece of splinting material applied to the posterior aspect of the arm. A circular bandage starting from the thumb side and passing over the back of the arm, is carried down to the thenar eminence. It then passes between the front aspect of the projecting splint and the dorsum of the hand. This turn pulls the hand into a position of extreme abduction. In addition to this a piece of cotton is placed between the dorsum of the hand and the splint forcing it into a position of flexion which does away almost entirely with pain. At the end of a week this splint is removed and replaced by a plaster-of-Paris barbarian splint moulded upon the posterior aspect of the arm, and held in place by a roller bandage. Daily massage and motion of fingers and wrist is given, and with this treatment we have succeeded in getting universally good results in Colles' fractures. The common method of treating this lesion between two straight splints, one upon the front, and the other upon the posterior aspect of the forearm, is illogical because a straight splint on the front of the arm cannot be made to make even a smooth pressure; again, a rigid splint upon the front of the arm causes edema of the hand. If one will think of his anatomy, there is not a vein in the forearm sufficiently large to be dignified in anatomies by a name that does not lie just under the skin. Rigid pressure by a splint closes these veins, requiring all the blood in the forearm to be returned through the deep vena comitus, causing passive edema and effusion in the wrist and hand. As an absolutely inflexible rule, complete surgical anesthesia should be insisted upon to accomplish the reduction of the fracture.

DISCUSSION.

Doctor Robert H. M. Dawbarn: I am proud of having been the originator of the operation advocated by Doctor Bodine for ancient Colles' fractures, and believe that it has a great future. In my first case I was much disappointed with the result, as the gap produced by chisel at the point of fracture in the radius would not remain, and little by little the deformity was reproduced. In my second case I decided to divide the ulna at quite a high point, the higher the better as to appearance. In doing this I used a Gigli wire saw, and took a thin wedge out of the ulna and at once put it in the chiseled gap in the radius to overcome the tendency to the lateral flexion or radial abduction of the wrist and hand, so chacteristic of the badly set fracture—more strikingly characteristic than is the silver-fork deformity. The result was ideal, as the bone was rather cancellous and imbibed by capillarity enough nourishment to live well. The second case was a failure, and the bone thus transplanted died. In all subsequent cases, I chiseled the piece taken from the ulna into small fragments—a dozen or less, and put them side by side in the radial gap, and there has been healing under Schede's moist blood-clot method, the vitalized plasma nourishing the bone chips. Sir William McEwan first demonstrated, many years ago, that bone can survive without periosteum. In trephining, for example, following his early suggestion, the disc, in cases proper for its replacement, was put back upon the dura mater, and in a little over fifty per cent of the cases it lives. The less compact it is—the more cancellous its diploe—the better are the chances that it will live; and lately, by chiseling the disc into small fragments, so that the capillarity will not have so far to travel, the percentage of success is perhaps as high as ninety. Now, in regard to handling fresh cases, the incision in the radius, as referred to by Doctor Bodine, should be directed transversely against the point of old fracture; and the skin incision corresponds, but is made in the long axia, and when low down on the forearm, the latter does not threaten the radial nerve as much as when made higher, as by Doctor Bodine. I have never cut it, although always on the qui vive as to an abnormality as to its course.

It should be a hard and fast rule never to attempt to reduce a Colles' fracture, except under general anesthesia, as no matter how brave a patient may be he will involuntarily stiffen his muscles and make difficult a reduction that would otherwise be very easy. Because of the rigidity of the dorsal tendons crossing the break, there will be tearing of their sheaths against the sharp, bony edges of the lower fragment; and hence a bad degree of tenosynovitis with stiff fingers, which condition might have been prevented by anesthesia. This, too, renders easy the rocking of the fragments, loosening and overcoming the impaction upon which the deformity depends. After the splint has been applied, make it a rule never to allow an hour to pass without having the fingers in motion. As to the splint, I am an advocate of plaster-of-Paris because it is most comfortable of all, but agree with Doctor Bodine as to the position of the hand and wrist. Of course, a Bavarian splint, opening at one side is wisest, because of the early swelling. During massage, great care should be exercised not to move the fragments.

DOCTOR BODINE: In my opinion plaster-of-Paris applied as a roller bandage is responsible for more loss of function than any other splint ever devised.

RADICAL OPERATION FOR HERNIA UNDER COCAIN ANESTHESIA.

DOCTOR JOHN A. BODINE: I wish to show three patients on whom I have performed radical operations for the cure of inguinal hernia under local anesthesia, not a single patient complaining of pain. In a number of instances, where a double hernia existed, not a patient had refused to have the second side done after the first was completed. In all of these herniotomies, the amount of cocain used was so small as to preclude the possibility of cocain poisoning. The first case shown is a Frenchman who could not speak a word of English, and with the natural nervousness of a foreigner in a hospital, before a number of visiting doctors, it represented a severe test as to the painlessness of the method. He did not stir hand or foot or express pain during the operation. Great stress was laid upon the position of the incision, which was stopped short an inch above the corrugations of the scrotum. Had it been carried this additional inch, as recommended in text-books, it would have been impossible to do the operation under local anesthesia. From six to thirteen separate vessels would have been divided, and this would have represented thirteen distinct twinges of pain in the very beginning of the operation, and twenty-six more twinges of pain in tying the divided ends; thus, these thirty-nine twinges of pain would have precluded the possibility of completing the operation under local cocain anesthesia. The second patient is a fat man, a type of patient not particularly amendable to this form of cure, as the layer of fat between the skin and the exposure of the iliac inguinal nerve contains many nerve endings that cannot be satisfactorily cocainized. However, this patient is ready to state to you tonight that his operation was wholly without pain. The third case is a double hernia, the first side having been done two weeks ago, and the man now states his willingness to have the other side operated on. This is good clinical proof that the method is without pain.

UNDESCENDED TESTES IN A CHILD.

Doctor Daniel A. Sinclair: I wish to show a case of undescended testes in a boy about twelve years of age. The left side was operated on in the early part of September, and the testicle brought down into the scrotum and anchored there. The boy also had a congenital hernia on this side, which was reduced, and the canal closed. The result of this anchoring of the testicle has been very satisfactory, and it is at present in its proper position in the scrotum.

A RARE BREAST CASE, ILLUSTRATING A TEACHING OF DOCTOR SYME, OF SCOTLAND

Doctor Robert H. M. Dawbarn: I desire to present a patient who has been referred to me with a diagnosis of cancer of the breast. There was a large, very hard mass, with small axillary glandular involvement, but not of cancerous nature evidently; and a typical history of cancer. The mass occupied the upper and outer quadrant mainly. Following the urgent teaching of Mr. Syme, I made my first stroke straight through the center of the hardest part of the growth, and a jet of pus spurted out, disclosing a pocket of perhaps a half ounce capacity. There was a very dense wall about this abscess, the better part of an inch in thickness. In other words, there was a staphylococcus infection, the explanation of which is that the vital cellular activity was not quite able to destroy the microbes, and the microbes were not quite virulent enough to spread, and the pus remained as a persistent, slight irritant, and simulated a cancerous growth. A drainage tube was inserted, the wound healed rapidly, and the induration has now almost subsided. This is the second case of the kind seen by me, and I have heard of a third case in Mount Sinai Hospital, in which the House Surgeon removed a breast which was seemingly cancerous, only to discover by cutting the tumor open later that this condition of chronic abscess existed.

DISCUSSION.

The question has been asked whether, in cutting into the breast in this manner and leaving the lymphatics open, the danger of spreading the disease, had it been cancer, would not have been very great? To this I would reply that had operation for removal of the breast been postponed until some time later on, this danger would have existed; but if the first incision proved the diagnosis of cancer to be correct, the patient should be kept under the anesthetic, and the breast and axillary contents should be removed then and there. Cutting into a cancer, and then packing the cut with absorbent gauze and proceeding to excise seems to me a lesser risk than an abscess found too late. Another point worthy of emphasis, which formed the subject of one of the last papers of the younger Gross, and a somewhat later one by Gerster, is that if the operation for removal of the breast is begun by removing the breast and then clearing away the axillary contents, the operation is very apt, by involuntary massage, and by squeezing the breast, necessarily, while amputating it, to send the cancerous juices (that is, the lymph current with epithelial cells) into the circulation, and cancer may develop rapidly internally as a result thereof. This technique is always reversed by the speaker, and the operation begun by cutting the axillary lymphatics and removing the armpit glands and fat and cutting the breast last. This order of procedure adds neither to the length, gravity nor difficulty of the operation, and does away with all probability of sending the cancerous juices into the circulation. This point is far from being a trifling one. I have often seen patients in whom the cancer reappeared so quickly inwardly—oftenest in the lungs—as to make the cause reasonably certain to him; but the profession as a whole have seemingly not learned of Doctor Gross' teaching.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., D. Sc., Ann Arbor, Michigan.
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AND
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FIRST ASSISTANT IN MEDICINE IN THE UNIVERSITY OF MICHIGAN.

TETANUS IN VACCINE.

It will be remembered that MacFarland, in 1902, was able to find ninety-five cases of tetanus following vaccine, most of them having occurred within a comparatively short time. MacFarland came to the conclusion that the vaccine virus contained the tetanus bacilli, and though this was denied by many, it was demonstrated to be possible. Carini (*Centralblatt f. Bakt.*, et cetera, 1 Abt. Orig. Band XXVII, page 48), chief of the vaccine division of the Institute for Infectious Diseases at Berne, has recently investigated the subject, with interesting results. Out of four hundred examinations of fifty different vaccines, some of them from his own institute, he found tetanus bacilli, by culture, five times. From this he concluded that tetanus germs must be included among the normal bacterial flora of vaccine, but they occur rarely and in scanty numbers, because he was sometimes able to get only one culture out of a series of tests of the same vaccine. The tetanus bacilli resist glycerine longer than other germs. In an old vaccine, in which the other germs were dead, tetanus germs were once found. As the author remarks, the bacilli do not offer a very great risk, otherwise cases of tetanus following vaccination would be more frequent. On the other hand, it is possible for the germs at times to be more numerous, in consequence of lack of cleanliness or other causes.

As a protection against the danger of tetanus in vaccination the author recommends superficial scarification, instead of punctures, and the avoidance of close dressings that exclude the air. Of course, measures should be taken to furnish vaccine free from tetanus.

[Personally, as a protection against various accidents in vaccination, I wish to call attention again to the advantages of vaccinating in clean shallow incisions, made with the point or edge of a sharp scalpel. The vaccine should be rubbed gently into the wounds (from two to four, one centimeter long and two centimeters apart) which heal with a minimum of necrosis. Any one who tries this will never again use the barbarous and septic denudation methods, or others that cause superficial necrosis with all its dangers.] G. D.

BLOOD PRESSURE AND PULSE RATE.

Stephens (*Journal of the American Medical Association*, October 1, 1904) reports at length experiments, the object of which has been to ascertain the effect of position upon blood pressure and pulse rate. The experiments were conducted upon healthy young men of an average age and height, and were made in the standing, sitting, supine, head-down, right-lateral, and left-lateral positions. The instrument employed was Cook's modification of the Rivo Rocci (narrow band). The results of the experiments are summed up as follows:

(1) The blood pressure increased in the bracheals from the standing to the head-down positions inclusively, in the following order: Standing, sitting, left-lateral, right-lateral, supine and head-downward.

(2) The greater the hydrostatic resistance in the upper portions of the circulatory system the greater the increase in pressure where the nervous and respiratory systems are kept normal.

(3) An increase of resistance is accompanied by an increase in heart strength. The strength of the heart, therefore, will increase in the different positions in the following order: Standing, sitting, left-lateral, right-lateral, supine and head-down.

(4) The pulse rate decreases in the same order that the blood pressure increases.

(5) The decrease in the pulse rate is a conservative act on the part of nature to protect the heart itself and the central nervous system.

[The experiments further show that the blood pressure is different in one arm than in the other, and for clinical data it is important that this fact be considered and that the same arm or both be used at each record.] D. M. C.

SURGERY.

By HENRY O. WALKER, M. D., Detroit, Michigan.
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AND
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LECTURER ON SURGERY AND DEMONSTRATOR OF SURGERY IN THE UNIVERSITY OF MICHIGAN.

THE TREATMENT OF FRACTURED PATELLA.

J. Alexander Hutchinson, M. D., of Montreal, discusses this subject in the *Annals of Surgery* for October, 1904.

Lister first demonstrated the possible success of the operative method of treating fracture of the patella. On October 29, 1883, he presented to the Medical Society of London six cases successfully treated by operation.

Fractures of the patella are divided into three classes. First—Indirect force, a tear due to muscular violence. Second—Direct violence. Third—Combined direct and indirect. Muscular contraction produces a transverse fracture with a wide lateral tear in the aponeurosis. Direct violence may cause an irregular fracture with slight damage to the aponeurosis. The third form is produced by muscular action and falling to the ground. There is severe contusion of the soft parts, hemorrhage and clot, which may tend to necrosis. Wide laceration of the aponeurosis allows great separation of the fragments, the torn aponeurosis falling between them. Muscular contraction tilts the upper fragment upward and lack of support with underlying blood clot causes the lower fragment to assume the same position.

The treatment is operative and nonoperative. Nonoperative treatment does not completely restore function, and a case that promises well at first will fail with advancing age. Operation is advised in the first and third classes in patients under fifty years of age, who are in good health. There are four different incisions practiced. First, perpendicular, about three inches long. Second, semilunar with convexity upward. Third, semilunar with convexity downward. Fourth, semilunar with convexity inward. The writer is partial to the semilunar with convexity downward. The blood clot and intervening tissues are removed by washing with salt solution and sponging with gauze. Two sutures are passed through drilled openings bringing the fragments together. Kangaroo tendon, chromicized catgut, silk or wire may be employed. A light, posterior splint is applied for a week or two, then the patient is allowed to get about on crutches. Massage and passive movement should be carried out after ten days. If wire is used and gives any trouble, it may be removed at the end of six weeks, under local anesthesia.

Six cases operated upon walk without lameness. C. G. D.

THE IDEA OF GROSS CLEANLINESS IN SURGERY AND ITS HARMFUL RESULTS.

ROBERT T. MORRIS (*New York Medical Record,* October 1, 1904) says the idea that wound discharges in general are unclean has developed with the teaching of scientific cleanliness to the extent that nurses and internes can with difficulty be made to understand the advantages of skillful neglect. He considers in detail three classes of repair.

(1) *Epithelial repair.*—This is best seen in an open wound where granulation tissue is well formed and epithelial cells, scarcely visible, are developing. Wiping pus from such a wound will disarrange or destroy a large number of the cells. Repair is delayed and a larger scar is formed. Antiseptic washes or plain sterile water have a damaging effect, the latter by absorbing salts from the new cells. Physiological salt solution does not irritate but damages the cells by force. Cotton

or gauze ever so carefully applied will tear away cells. Such wounds should be dressed with silver foil, Cargile membrane or Lister's silk. The surrounding skin should be kept perfectly clean.

(2) *Connective tissue repair.*—This may be seen in the healing of a fecal fistula. Here new cells are heaped up in granulation tissue which contracts. The free use of washes or water will damage the cells or separate the walls, delaying for weeks a union which might have been completed in a few days.

(3) *Endothelial repair.*—This is seen in perforating appendicitis with extensive peritoneal infection. Here gross cleanliness has been responsible for a large death rate. Wiping, washing and using large masses of gauze for drainage, deprives the patient of much of his natural resistance to infection.

The results impress one with the idea that gross cleanliness is frequently overdone. C. G. D.

OBSTETRICS.

By WILLIAM HORACE MORLEY, PH. B., M. D., ANN ARBOR, MICHIGAN.
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PURSUING STUDIES AT BERLIN UNIVERSITY.
AND
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INTRAPELVIC HEMATOMA FOLLOWING LABOR NOT ASSOCIATED WITH LESIONS OF THE UTERUS.

In his discussion of this subject J. Whitridge Williams defines (*American Journal of Obstetrics,* October, 1904) a puerperal hematoma as an effusion of a greater or less quantity of blood into the connective tissue spaces of some portion of the genital tract, or into the structures immediately adjacent to it, in contradistinction to hematocele formation, in which the blood is poured into the peritoneal cavity and there becomes encapsulated.

Hematomata are classified as vulval, perineal, vaginal and subperitoneal or broad-ligament. Subperitoneal hematomata are collections of blood beneath the peritoneum, but above the pelvic floor. They are infrequent and usually due to incomplete rupture of the uterus or deep cervical tears. The author cites a case, following labor, in which there was a subperitoneal hematoma, lying in front of and below the uterus and bladder. A provisional diagnosis of an incomplete rupture of the uterus was made and on account of the patient's low condition an operation was decided on. A laparotomy was performed and after dissecting back the peritoneum the cavity of the hematoma was sponged out and packed tightly with iodoform gauze. It appeared impossible to arrest the hemorrhage by the application of sutures as the bleeding came from an oozing surface upon the inferior and anterior portion of the bladder walls. Recovery was gradual but uninterrupted.

The literature contains thirty-three cases of subperitoneal hematoma following labor and not associated with rupture of the uterus. This is the first case treated by laparotomy. The amount of blood lost in these cases varies greatly. In many the hematoma attains immense proportions, the peritoneum being dissected up to such an extent that the blood comes to lie in the iliac fossæ, and frequently extends up along the psoas muscles to the region of the kidneys and occasionally to the roots of the diaphragm. Twenty per cent of twenty-nine cases in the literature occurred in primiparæ. In marked contrast to the course of labor preceding hematoma, due to incomplete rupture of the uterus, in the vast majority of cases the delivery was easy and spontaneous. The children were somewhat smaller than usual, the heaviest child, with one exception, not weighing over eight pounds, while the majority weighed less than seven pounds.

The mortality in the recorded cases is fifty-six per cent. There has been but a single death in the eleven cases which occurred after the introduction of modern surgical methods, so it is reasonable to infer that a considerable proportion of the previous mortality was due to puerperal infection. In not a few cases the actual cause of death was acute anemia. Perret demonstrated at autopsy that the hemorrhage was capillary in character, as the fluids slowly oozed from various points of the wall of the hematoma, no matter whether the injection was made into veins or arteries, and he concludes that the hemorrhage is due to the tearing through of small vessels, by the tissues of the birth canal being slowly dragged off from their attachments by the friction exerted by the oncoming presenting part.

Important points in diagnosis are: Pain about rectum and lower abdomen; collapsed condition of patient, which becomes more severe as the amount of blood loss increases; elevated position of fundus; palpation of a tumor mass depressing one or both vaginal fornices and Douglass' culdesac and extending directly outward from the cervix toward the pelvic wall.

In the vast majority of cases the treatment is symptomatic and expectant. If, however, the tumor increases in size rapidly and the collapse becomes more pronounced, laparotomy is advised. If the acute symptoms have subsided and there is a clinical picture of suppurative changes, attack by the vaginal route is preferable. H. S. M'G.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.
ASSISTANT TO THE CHAIR OF LARYNGOLOGY IN THE DETROIT COLLEGE OF MEDICINE.

ON VINCENT'S ANGINA.

H. W. Bruce (*Lancet*, July 16, 1904) says that Vincent's angina is a form of pseudodiphtheria which is associated with, and is probably due to certain characteristic microorganisms. Early diagnosis is important, and depends mainly upon bacteriological examination. If the clinical features be alone relied upon in the early stages, it will frequently be mistaken for diphtheria. In Vincent's angina there is a necrosis of the mucous membrane, which, spreading deeply, may destroy the whole thickness of the tonsil or the uvula, but which never gives rise to the formation on the surface of the mucosa of a thick false membrane such as occurs in diphtheria. When a considerable amount of destruction of tissue has taken place the diagnosis is made readily enough. Milder cases may resemble diphtheria closely.

The onset is often, in children, quite insidious. In some cases it has only been discovered during a routine examination of the throat, or by the glandular enlargements. The minority only complain of sore throat. In adults headache, general malaise, or sore throat, or a combination of these symptoms may usher in the disease. The throat in the early stages shows what appears to be a patch of exudation on the tonsil, the upper part of the uvula on the same side, and on the edge of the soft palate between.

The pseudomembrane is yellowish or greenish-yellow in color. It is detached only with difficulty, leaving a bleeding eroded surface, and has a very distinct fetor. The temperature rarely exceeds 101° Fahrenheit. In from twenty-four to forty-eight hours the temperature falls to normal and the general symptoms disappear, but the condition in the throat undergoes no particular change. The necrosed patch separates slowly. The tonsils clear up in from eight to ten days. There are no complications or after-effects.

In severe cases extensive sloughing may take place. Recovery is the rule although death may follow very severe cases. Relapses may occur, and one attack does not confer immunity. The disease is due to the fusiform bacillus of Vincent. Ten cases are reported by the author.

ADENOIDS IN INFANTS.

H. Jarecky (*New York Medical Journal,* August 13, 1904) reports five cases in infants under three months of age. In making a diagnosis of adenoids in infants we must naturally depend to a great extent upon inability to nurse properly and noisy mouth breathing. However, many other cases of noisy breathing should be excluded. These briefly mentioned are:

(1) Congenital: a, diminution in size or occlusion of one or both nostrils; b, highly arched palate or deformity of soft palate; c, distortion of cervical vertebræ; and d, atelectasis.

(2) Constitutional Diseases: a, syphilis; b, lymphatism; c, tuberculosis; d, lithemia.

(3) Other Conditions: a, acute rhinitis; b, retropharyngeal abscess; c, disturbances of digestion; d, paralysis of soft palate or pharynx; e, diphtheria, especially nasal.

The cases were operated upon by curetting away the growths while the infant was held in the nurse's arms. No anesthetic was used. All the cases were benefited.

OZENA (ATROPHIC FETID RHINITIS) A CAUSE OF GASTRITIS.

ADOLPH BRONNER (*British Medical Journal,* July 16, 1904) calls attention to atrophic nasal disease as a cause of the peculiar pale, ashy complexion of the patient. A bad taste in the mouth in the morning, with vomiting, and no appetite are other common complaints. These symptoms are due to the passing of the offensive nasal discharge full of bacilli, into the stomach, and their deleterious action on the mucous membrane and on the contents of the stomach.

Cases are cited wherein the gastric condition improved after the nasal condition was treated.

DERMATOLOGY.

BY WILLIAM FLEMING BREAKEY. M. D., ANN ARBOR, MICHIGAN.
LECTURER ON DERMATOLOGY AND SYPHILOLOGY IN THE UNIVERSITY OF MICHIGAN.

A FURTHER CONSIDERATION OF MUCOUS MEMBRANE AND SKIN DISEASES.

UNDER the title of "Affections of the Mucous Membranes in Their Relation to Skin Diseases," Doctor John A. Fordyce read an interesting paper before the recent meeting of the American Dermatological Association which has since been published in the *Journal of Cutaneous Diseases* for September. Mention of but a few of the many good things in it can be made in the limits of an abstract.

Our knowledge of mucous membrane affections which are related to skin diseases, aside from certain observations on the mucous membrane of the urethra and vagina, has been chiefly obtained from a study of the lesions which are met with in the mouth, nose, and upper air-passages.

The diseases of the oral and nasal cavities are also logically related to those of the skin because of the common embryological origin of their respective tissues, their mucous lining being developed from the ectoderm.

The outer layer of the epidermic covering of the mouth, which consists of stratified squamous cells and is continuous with that of the skin and pharynx, is kept constantly moist by the mucous and salivary secretions. The cells, unlike the stratified horny layer of the skin exposed to the drying influence of the atmosphere, do not lose their nuclei as the surface is approached. On the lips, where the skin passes into mucous membrane, the epidermis becomes greatly thickened, while the connective tissue grows thinner, and the hair follicles disappear, but the sebaceous glands persist near the angle of the mouth and in the upper lip. They are also occasionally found in the oral cavity and now and then are so numerous over the lips as to constitute a positive deformity. Krakow, in two hundred autopsies performed on individuals of the ages of from three to eighty-three years, found sebaceous glands in the mucous membrane of the cheek in thirty per cent of the cases. They correspond in power of development and structure with those in the skin.

Doctor Fordyce refers to an affection described by him in 1896 under the title of "A Peculiar Affection of the Mucous Membrane of the Lips and Oral Cavity," and which was at that time erroneously believed to be due to a degenerative change in the epithelium of the affected part. The description and illustration made a striking impression, and the condition was called by many "Fordyce's Disease"—it is needless to add not by Doctor Fordyce himself; but it furnished another instance of the inadvisability of naming diseases after individuals rather than pathological conditions. Doctor D. W. Montgomery and Hay and others have since clearly proved that the presence of sebaceous glands in these localities produces the clinical appearance described. Doctor J. M. H. Macleod (*British Journal of Dermatology,* 1904) has recently described a similar case, but has evidently overlooked the investigations connecting the clinical picture with the presence of sebaceous glands, as has also Crocker in the last edition of his work on "Diseases of the Skin." Sebaceous adenomata in connection with the affection on the face have been described by Buschke and others.

As we so often look to the lesions in the mouth to confirm or remove beliefs of the existence of syphilis it is well to have in mind the possibilities in differential diagnosis. In the case of lichen planus, for example, the skin, mouth, and genital organs may be simultaneously involved and readily mislead even an observer of considerable experience. Syphilis, cancer, lupus erythematosus and other affections are modified in their clinical features by the structural peculiarities of the tongue. The implication of the mucous membranes in the acute exanthemata is almost invariable, and the rash occurring here as it sometimes does in measles and scarlatina before it appears on the skin, may materially aid in making diagnosis.

The chronic infective granulomata are also, at some time in their course, found on the visible mucous membrane. There is a growing belief that the bacillus of lepra may find its first lodging place in the mucosa of the nasal passages on the upper respiratory tract. The characteristic microörganisms can usually be found in the nasal secretion of lepers, especially after the production of a coryza by the administration of iodid of potassium. W. F. B.

PSYCHIATRY.

By WILLIAM M. EDWARDS, M. D., KALAMAZOO, MICHIGAN.
MEDICAL SUPERINTENDENT OF THE MICHIGAN ASYLUM FOR THE INSANE.

PSYCHOPATHIC WARDS, PAVILIONS AND HOSPITALS FOR AMERICAN CITIES.

DOCTOR L. PIERCE CLARK, of New York City (*American Journal of Insanity,* July, 1904) describes a series of plans for psychopathic wards and hospitals for American cities of various sizes. He first speaks of the German hospitals of this character, describing briefly the steps that led to their erection and their practical development. To Griesenger is given the credit of forming the first plan for such a hospital. The names of such distinguished men as Fürstner, Kraepelin, Hitzig, Fleichsig and Semmerling are mentioned in connection with the clinics at some of these hospitals, but Somers, of Giessen, is given the credit for most completely developing the practical side of the question. Doctor Clark urges the erection of hospitals of this character that provide for all forms of brain disease accompanied with psychic defect such as borderland cases not certifiable as insane, the hysterical, epileptic and alcoholic psychoses and psychoneuropaths. He traces the development of the psychopathic idea by the Germans and describes the three types of provision prevailing at different places. He regards the independent hospital the better and considers the one at Kiel as the most nearly ideal of this type and describes briefly its style, capacity and gives figures of the cost of construction and of rate of maintenance. The clinic in this hospital is under the control of Doctor Semmerling, who is also the director of psychiatry in the University of Kiel.

Doctor Clark elaborates and unfolds a plan for American cities and advocates first the psychopathic ward in or attached to the general hospital and intended for cities from ten to twenty thousand people, such a plan to consist of a wing of two stories with a ward for each sex. A type of this is the ward which has been in operation for a number of years in connection with the City Hospital at Albany, New York. His second suggestion is for a psychopathic pavilion adjacent to or disconnected from a general hospital and adapted for cities from twenty to fifty thousand inhabitants. This has all the special features of plan number one and in addition provides for the residence of a trained alienist and nurses and has an outclinic department. He cautions that such a pavilion be not established in too large a city lest so great a demand be made upon it that it will be made to serve simply as a place for diagnosis and certification. He mentions Bellevue Hospital Pavilion in New York City as a glaring example of this defect of construction.. His third plan, which he considers by far the most desirable, is a psychopathic hospital having a separate and independent existence. This can be arranged for cities of the largest size but should not contain more than one hundred fifty to two hundred beds. In a city requiring more accommodation than this two or more hospitals might be erected as is contemplated in London. This plan provides for reception wards, isolation wards, convalescent wards for both sexes, a top floor for nurses, roof garden, residence for a director and assistant physicians with the necessary outbuildings and general utilities.

Doctor Clark would have the least possible restriction surround the admission of patients. Voluntary commitment should prevail and patients should be allowed to come and go with the least formality consistent with their welfare. They may be remanded by a city magistrate pending an examination and a formal certificate of insanity should only issue when a patient is transferred to a state asylum. The chief causes for creating special mental clinics are the urgency for early care and treatment and the formality and delay ordinarily incident to admission to a state asylum. The outclinic department of such hospitals should be an important feature.

The article is most excellently supplemented by the carefully designed floor plans of the proposed structures. These show evidence of much painstaking thought and are well adapted to their purpose in arrangement of space and general detail. The perspective view of the third type shows a group of buildings well arranged and of harmonious and pleasing exterior. These plans, which will be of great aid to those building psychopathic wards or hospitals, were designed by Mr. H. P. Alan Montgomery, of New York City.

THERAPEUTICS.

By DELOS LEONARD PARKER, Ph. B., M. D., Detroit, Michigan.
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A CASE OF ULCER OF THE STOMACH.

Doctor Paul Lucas Championniere in the September 10, 1904, number of the *Journal de Medécine et de Chirurgie Pratiques*, reports a case of gastric ulcer that is worthy of being reproduced.

He begins his report by saying that the diagnosis of simple ulcer of the stomach is frequently so difficult that the study of any case coming under observation is a profitable undertaking. The case reported is that of a man of forty-seven who entered the hospital on account of weakness resulting from hematemesis. The patient when first seen was pulseless and in a condition of collapse. The skin was pale, the mucous membranes colorless and black stools were present as a result of the hemorrhage in the stomach. There was no pain of the stomach, neither spontaneous nor upon pressure, and, what was considered to be of great importance, the liver appeared to be normal.

According to the patient's story the amount of blood vomited had been very great and always black in color. The latter fact showing the blood had remained some time in the stomach. The attacks of vomiting had always been preceded by a feeling of discomfort, but not by the acute pains so commonly found to be present in ulceration of the stomach. He seemed to suffer from a dyspeptic condition that had lessened neither his appetite nor his strength previous to the last attack.

This patient had had a similar experience four years before the one here described. At this time he was under treatment four months and then returned to his work. During the interval between these attacks he had had at times symptoms of indigestion of a mild character and on a few occasions had vomited small quantities of blood. A diagnosis of simple ulcer of the stomach was made in this case and practically established by reason of the fact that both alcoholic irritation of the stomach and changes in the mucous membrane due to an old gastritis could be eliminated. The interest in this case was connected with the complete absence of pain. Cases of gastric ulcer are occasionally reported in which the element of pain is not prominent but it is rare to find them so free from distress as the one here reported.

The prognosis was made favorable in this instance by observing that the liver was normal both as to size and tolerance of pressure.

The treatment in this case consisted of the limiting of the diet to milk. This was followed by recovery.

EDITORIAL COMMENT.

THE GELATIN TREATMENT OF ANEURYSM.

ALTHOUGH the methods of treating aneurysm are well nigh as diversified as the condition is ancient, the basic principle of each contemplates instituting a change in tissue whereby spontaneous cure may be effected, and hence the election of any particular treatment depends upon the personal equation. Tufnell's rest and diet system will appeal to those who seek to cause the deposit of a laminated clot by the application of medical measures, whereas one of the operations devised for the same purpose by Anel, Hunter, Brasdor, and Wardrop will find favor with the surgically inclined. The rapid coagulation of the contents of an aneurysm, as exemplified by Reid's method of applying an Esmarch bandage above and below the sac, has proven efficient in dealing with certain patients, but the practice of excluding an aneurysm by free incision in suppurative conditions is fraught with grave danger, and amputation is frequently rendered necessary to save life. While these procedures, together with others not specified, have many ardent advocates, preferences are not likely to militate against a somewhat recent and apparently promising method of treatment receiving consideration.

* * *

The treatment of aneurysm by means of gelatin is based upon the now well-known hypothesis that the introduction of gelatin into the body, either by mouth, rectum or subcutaneously produces greater coagulability of the blood. Lancereaux was the first investigator to utilize this knowledge in the treatment of aneurysm, his idea being that wherever the blood current is the most sluggish there will the greater coagulation take place. A dilated blood-vessel, he argues, furnishes just the requisite to cause a deposit of fibrin in the aneurysm and thereby decrease its lumen, strengthen its walls, and bring about a physiological cure.

* * *

The method has given good results in the practice of Harmen and Dusolier, who report a number of cases. Lancereaux reports eight cases of aneurysm of the aorta, four of which showed marked improvement, including disappearance of the tumor. In two of his fatal cases the aneurysm had attained such size as to give reason for much alarm, but indications of improvement were very evident after the gelatin injection.

* * *

The occurrence of tetanus following the use of gelatin in a few of these cases, for a time threw a shadow over its general adoption and especially over Lancereaux's method of treatment—subcutaneous injection. Thorough sterilization, however, has overcome this unfortunate accident, and when subcutaneous injections are made this is absolutely necessary. The employment of gelatin by mouth and rectum, while it does not apparently have so immediate an effect in these cases, is thought by many to be safer.

* * *

Harmen injected five and one-half drams of gelatin in the course of eleven weeks in doses of ten cubic centimeters of a twenty-per-cent solution once a week. Dusolier injected one and five-tenths grams the first week, and three grams the second, always with from one hundred fifty to two hundred cubic centimeters of fluid. Lancereaux employed and recommends an injection consisting of five grams of gelatin and two hundred fifty cubic centimeters of normal salt solution every third or fourth day instead of once a week, the gelatin having been previously subjected to 105° to 115° centigrade. Dusolier reports more or less severe pyrexial attacks after each injection, while Lancereaux states that this occurred only occasionally in his practice, and that he has made thousands of injections without untoward results.

* * *

A serious offset to the employment of gelatin injections—which appear to have precedence over other methods of administration—is the alarming occurrence of tetanus following its use. More particularly has this sequela been noted after injections of gelatin as a hemostatic. The sterilization of gelatin is something that requires more than a day and should be executed by one who is thoroughly acquainted with its needs. Thus the injection method is practical in institutional work, but in private practice recourse must be had to introduction by mouth or rectum. The action of gelatin is supposed to be due to its calcium chlorid content and many are investigating the effect of this latter substance on hemorrhagic conditions. D. M. C.

ANNOTATIONS.

THE SERUM TREATMENT OF TYPHOID.

PROFESSOR CHANTEMESSE read a paper on the antiserum treatment of typhoid fever at the French Medical Congress which convened in Paris last month. The method of preparing this medicament—which contemplates injecting soluble typhoid toxin into the horse—was described by this investigator in a former contribution. The serum has been employed by Chantemesse in five hundred forty-five cases at one of the Parisian hospitals, with a record of only twenty-two deaths—four per cent, while at fourteen other hospitals in that city three thousand one hundred ninety-nine cases were subjected to the usual line of treatment, with a record of five hundred eighty-one deaths—eighteen per cent. The administration and action of the serum are considered. The relation of the new therapeutic agent to typhoid is decidedly different from that of antitoxin to diphtheria. In diphtheria the strength of the dose is increased in proportion to the severity of the disease, but in the administration of the typhoid serum the reverse is correct practice. The efficacy of the serum is attributed to stimulation of the spleen, lymphoid tissue, and bone, the effect being more pronounced the earlier the preparation is enlisted.

A NEW INSTRUCTOR IN PATHOLOGY.

Doctor Elmore E. Butterfield, of Baltimore, has lately been appointed instructor in pathology at the University of Michigan vice Doctor Frederick A. Baldwin, who recently accepted the position of assistant city pathologist at Saint Louis. Doctor Butterfield received his medical degree at Columbian University in 1903. During the junior and senior years of his collegiate course he filled the position of pathological interne in Garfield Memorial Hospital, and the year following he was elevated to the charge of resident pathologist of this institution, during which incumbency he likewise served in the capacity of senior demonstrator of pathology in Columbian University. In 1904 he became assistant to Doctor William Webber Ford in the Bacteriological Laboratory of Johns Hopkins Hospital, where he was engaged in pursuing investigations bearing on the biological characters, reciprocal agglutinative affinities, and comparative pathogenesis of all the organisms of hog cholera, as well as the pathological histology of the lesions produced by them. His research in this direction was interrupted by his acceptance of the position at Ann Arbor. Owing to the proximity of Baltimore to Washington Doctor Butterfield was enabled to pursue the study of pathology at Johns Hopkins under Welch, MacCallum, Cullen and Bloodgood during 1903-4, leaving the routine work of his responsibility in Washington to assistants. The doctor's record bespeaks his fitness for the new appointment. A paper from his pen, entitled "The Pancreas in Amyloid Disease," will be published in the next issue of this journal.

INFECTION VERSUS INHERITANCE.

Doctor Robert Koch's theory of hereditary predisposition to consumption was recently repudiated in a public lecture delivered by Doctor Charles L. Mix, of Chicago. The speaker declared that the theory of inheritance is untenable, and cited statistics to prove that the disease is the direct result of infection or exposure. He stated that the hereditary theory is popularly accepted because phthisis is present in some families and absent in others, but before this doctrine can be considered tenable he thinks it will be necessary to solve the problem contemplated in the showing that one-third of all stenographers and twenty-eight per cent of bookkeepers succumb to the disease, while only one-tenth of persons engaged in outdoor work exhibit the hereditary tendency. The reason that girls are afflicted with the white plague in greater numbers than are boys is ascribed to the fact that the former are confined to the house ministering to consumptive parents.

A PHYSICAL CULTURE APPOINTEE.

Doctor Helen E. Brooks, of Gloucester, Massachusetts, has succeeded to the directorship of Barbour Gymnasium at Ann Arbor which was made vacant by the resignation of Doctor Alice G. Snyder. Doctor Brooks received the degree of Doctor of Medicine at the Woman's Medical College of Pennsylvania in 1904. Prior to beginning the study of medicine she graduated from the Boston Normal School of Gymnastics, and has taught physical training at the Rhode Island State College, the Clarke School for the Deaf at Northampton (Massachusetts) and in the Gloucester and Peabody (Massachusetts) public schools. The doctor is especially equipped to perform the work delegated to her by the Regents, which contemplates not only conducting this important department along lines heretofore pursued, but developing its possibilities as well.

THE AGGLUTINATION TEST FOR TUBERCULOSIS.

This reaction may be demonstrated by adding a few drops of serum from a suspected tuberculous person to homogeneous cultures of tubercle bacilli from the blood of tuberculous patients, providing the suspect is afflicted with the disease. Courmont recounts over one thousand cases in which this experiment was performed, agglutination insuring a positive diagnosis in eighty-five per cent. The test is negative in nontuberculous persons.

CONTEMPORARY.

HEREDITY AND LIFE ASSURANCE.

[BOSTON MEDICAL AND SURGICAL JOURNAL.]

During the past few years a marked change of attitude has been evident toward the question of heredity in its relation to disease. With the vague knowledge which our forefathers had it was easy to attribute what could not then be understood to a subtle influence for which in some inexplicable way ancestors were responsible. There is probably no more deeply rooted conception in the popular mind than that heredity is an all important factor in the production of many types of disease. This feeling still persists not only among the laity, but in considerable measure among physicians as well. That this has a very large foundation in fact we have no wish to deny, but that much which has been attributed to hereditary influence may be otherwise more simply explained is becoming each year more apparent. That our attitude toward the subject should be revised to meet all the facts of knowledge as now obtainable is not to be questioned, and an analysis of hereditary conditions is now demanded of the medical men which a few years ago would have been thought quite unnecessary. We need as never before to know as definitely as possible what may be legitimately attributed to hereditary influences and what may more probably be connected with all the acquired facts and conditions of life irrespective of the original soil.

* * *

We have before us an address by Sir William Gowers on the subject, "Insanity and Epilepsy in Relation to Life Assurance," published in the *Lancet* for October 15, 1904. It will be generally acknowledged that life assurance companies have laid special stress upon the effects of heredity as popularly determined. The interpretation which they have put upon the numerous facts at their disposal has led them no doubt in this course. It has not rarely been impressed upon us that the life assurance societies frequently attach importance to circumstances which probably have but little weight as regards the expectation of life, whereas certain fundamental points in the personal examination of an applicant are overlooked. We refer especially to the examination of the nervous system wherein facts of the ancestry are apparently given much weight, whereas such fundamental signs as the condition of the knee jerks and the reaction of the pupils are overlooked. We have been, therefore, particularly interested in Doctor Gowers' conclusions regarding the question of life assurance risks in relation to certain conditions of the nervous system.

* * *

In arriving at his conclusions he has made use of statistics tabulated by Doctor Claud Muirhead, covering a series of nearly ten thousand male lives. Excluding the disease, general paralysis, which Doctor Gowers states causes far more loss to insurance offices than all other forms of mental alienation combined, he arrived at somewhat unexpected results in his analysis of other forms of insanity. In answer to the question as to whether an actually insane person may be accepted for life insurance on any terms he returns an unquestioned affirmative. In this connection he quotes an interesting case which has come under his personal observation wherein a life insurance company made a clear profit of forty-six thousand pounds in the case of a man certified as insane at the age of twenty-eight. He died at the age of eighty-eight, having spent sixty years in an asylum. The imbecility assocated with this case was rather in favor of prolonged life than against it, and this must in general be the fact when one considers the extraordinary personal care which such unfortunates now receive at the hands of those in charge of them.

* * *

Speaking of family history, Doctor Gowers alludes to the tendency to regard a family history of insanity as almost on a level with that of turbeculosis in its influence on the eligibility of a life. The evidence for this supposition he considers, however, extremely small, and finds on an analysis of Doctor Muirhead's statistics that a family history of mental alienation has proved to be of no significance as regards the duration of life. His own experience is in general harmonious with this conclusion. He states that in very few cases of death from insanity met with in his insurance work has there been indication of such possibility in the family history. From this and many other facts the conclusion is adduced "that in a perfectly healthy proposer no family history of insanity is ground for regarding the life as below the average, so far as death from this cause is concerned; that a previous attack of mental derangement, or any symptoms of present undefined mental disturbance, should preclude insurance, but that in some forms of established insanity a proposer may be accepted at a considerable extra cost without unreasonable risk."

* * *

The question of suicide in relation to life assurance is also considered in this address. Here also Doctor Gowers thinks that so far as the facts at present go the risk of suicide does not augment the risk which a neurotic family history would otherwise receive. Insane heredity he finds plays a small part in suicide. Financial causes and matters relating to the stress of life are a far more potent factor in its production. Even in the case of epilepsy, which Doctor Gowers discusses at considerable length, he thinks certain persons are insurable.

* * *

We cannot do more at this time than call attention to the main facts presented by Doctor Gowers. The weight of his opinion must undoubtedly have an influence, verified as it is by many years of experience and accurate observation. In general, we are glad to call attention to this address because, as we stated at the outset, we are continually being impressed with the false perspective prevalent, regarding the obscure diseases of the nervous system. We have no question that if all the facts could be judicially weighed it would be found by other observers as well as by Doctor Gowers that the supposed influence of heredity is far less potent for harm than is commonly believed. Even on the statistical side the matter is very difficult of proper solution, but enough knowledge has certainly accumulated to make us very conservative in our estimates of the effects upon the descendants, of various diseases of the ancestors. The life assurance companies may do much to help on the work by tabulating their statistics in the light of our knowledge.

"SOMETHING JUST AS GOOD."

[SAINT LOUIS MEDICAL REVIEW.]

THIS phrase, "familiar in our" ears "as household words," has received quite recently in the city of New York a very significant side-light. For years past, many of the principal drug houses of exemplary reputation have been issuing protests through the medical press and otherwise against the practice of substitution. Such substitution has been effected in various ways. When a purchaser has sought a particular preparation, it has been not uncommon for the drug clerk to state that he had not that particular preparation on hand, and in the same breath to recommend some other as being "just as good." In many cases, doubtless, the mainspring of his action lay in the fact that the substituted preparation, being of a cheaper character than that which it was intended to represent, afforded the druggist a larger margin of profit. Another and still worse mode of substitution was the replacing, while compounding a physician's prescription, of some expensive or scarce drug with one either of inferior make and grade, or altogether different. Under no circumstances can such a practice be considered other than flagrant dishonesty; and in the second mentioned form it is not only a fraud upon the public but also a direct injury to the physician, who may find a method of treatment in which he has for years imposed a justified confidence, suddenly and most unaccountably fail him.

* * *

But this petty larceny of substitution pales into insignificance before the widespread drug frauds that have recently been run to earth in New York. A raid made upon a drug store in Columbus avenue resulted in the seizure of a wagonload of fraudulent drugs and of the necessary plant for putting them up into packages, so as to counterfeit well known preparations of standard quality put upon the market by firms of the highest scientific and commercial reputation. The coal-tar derivatives, many of which, although proprietary, have become so much a part of the materia medica of today, that their abolition would seriously hamper medical practice, were the special field of attack. Acetanilid, a very powerful drug, is, owing to its intensely depressing action on the heart, a very dangerous one. It is also, unfortunately, comparatively cheap. It is not surprising, therefore, to find these drug falsifiers sending out preparations purporting to belong to the higher class of drugs but composed largely of acetanilid. The dangerous effect of such substitution in a case of acute illness, pneumonia for example, needs no pointing out.

* * *

The entire subject of proprietary remedies is one that greatly exercises the medical profession, and particularly that portion of it whose vocation is preaching, not practising. Indeed, it is well known that, despite all the care and thought devoted to the subject, no one has yet been able to formulate such a definition as shall clearly separate the legitimate proprietary medicine from the nostrum. The difficulty closely resembles that problem in biology of defining the limiting point between animal and vegetable. There is of course no difficulty in deciding that a horse is an animal and an oak a vegetable; but when the inquiry is carried down to the lowest realms of life, the decision as to whether a primitive organism is animal or vegetable is by no means so easy. So, in the same way, such drugs as sulphonal, urotropin, adrenalin, ichthyol, eucaine, and innumerable others are clearly discernible at first sight as legitimate medicines, while others of greater notoriety, if of less fame, may be unhesitatingly classed as nostrums. In point of fact all preparations, whether in the pharmacopea or not, if used by the ignorant who understand neither the proper indications for their use, nor the dangers attendant upon it, become nostrums in act. On the other hand a preparation, whether proprietary or not, and whether a simple substance or a mixture, if prepared by a firm with a reputation for scientific care and accuracy, so as to ensure the product being always as nearly as possible the same in constitution, and if carefully and clinically studied as to its results by competent observers, and used by competent physicians acquainted with the clinical data concerning it, may fairly be styled a legitimate medicine. It would be as ridiculous to brand as a nostrum a given preparation because it was a mixture and not a simple substance or an alkaloid, as it would be to discard any of the nonelementary medicines, whether from the mineral or vegetable world, or even the alkaloid itself, because it had a molecular composition. As a matter of fact, the experimentalist and the clinician have to investigate as an individual entity every substance, whether it be a mixture, such as gray powder, or a vegetable drug such as cinchona bark with all its contained vegetable alkaloids, a mineral salt such as copper sulphate, or an alkaloid such as quinin, in just the same manner that they would investigate a chemical itself. That being so, provided that the composition of any proprietary remedy is constant, it would seem to be a legitimate item in the materia medica in proportion to the clinical knowledge obtained concerning it. But for such constancy of constitution, as for the excellence of any kind of manufactured article whatsoever, most of us can only rely upon the established reputation of the producer. Upon this hinges the whole question of proprietary ethics. It is difficult to see how we could get along as a profession if we had to prepare all the armamentarium medicum for our own use, and could not have it prepared for us commercially. But if we require commercial men to enter upon the field of its production, to invest money in plant and the salaries of scientific investigators, and to organize and control their laboratories and warehouses upon principles of scientific care and accuracy, then it seems reasonable that each such firm, jealous of its professional and commercial reputation, should affix to its own products some distinguishing mark—whether it be a trade mark, or whether it be the fantastic kind of a name which is associated in the minds of most of us with the idea of a proprietary—

whereby it may avoid the condemnation of its own products in consequence of the failures of similar preparations, and may equally receive such credit as may be due to it on account of their particular merits whatever they may be.

* * *

With these considerations in view, it is easy to comprehend the strenuous exertions that have been made to run to earth this gang of perpetrators of a murderous fraud; a fraud not only against those interested financially and as to their commercial reputations, but a fraud directed against the professional reputation of every medical practitioner, and against the life of every patient to whom the substituted counterfeits are administered under the care of a conscientious and competent physician, in place of reputable and trustworthy preparations.

MEDICAL NEWS.

ARRESTED FOR VIOLATION OF INJUNCTION.

Doctor N. News Wood, president of the notorious Christian Hospital, of Chicago, was arrested on October 10, for contempt of court, the offense being a violation of the injunction issued last year to restrain him from using the name, signature, or picture of Doctor John B. Murphy in connection with his joint, or representing in any other manner that this physician aided or abetted the nefarious business in which he was engaged. The defendant was released from custody incident to the recent charge by furnishing one thousand dollars bonds and given further time to show cause why he should not be punished. The complaint is based on the fact that Wood has been selling membership certificates engrossed with the picture of Doctor Murphy, and otherwise endeavoring to bolster his business by the use of plaintiff's name.

MINOR INTELLIGENCE.

Professor Albert B. Prescott has been appointed director of the chemical laboratory of the University of Michigan vice Doctor Paul C. Freer, resigned.

Doctor Charles B. Nancrede, professor of surgery in the University of Michigan, has had his title lengthened by addition of the words "and director of surgical clinics."

The Association for Improving the Condition of the Poor in New York City has thirty-six tuberculous children in charge at the Seaside Tent Camp on Coney Island. The executive committee of the Board of Education lately received a request to assign teachers to the poor unfortunates, the society offering a schoolroom on condition that the Board furnish teacher, books, and desks. The prayer of the petitioners was granted.

THE Jersey City Hospital recently sustained an accident which caused considerable damage and fright. The ceiling in the drug room collapsed, wrecking the stock of medicine and nearly precipitating a panic among the patients.

PROFESOR NIELS FINSEN, whose funeral took place recently at Copenhagen, was singularly honored by the crowned heads of the Old World. The Kings of Greece and Denmark attended the last sad rites in person, while almost every country in Europe was represented by its embassy.

DOCTOR WALTER R. PARKER, the recently-appointed professor of ophthalmology at the University of Michigan, has opened offices in the Wild Building, State street south, Ann Arbor, where Doctor George Slocum, the new demonstrator of ophthalmology, will have offices in connection.

COLUMBIA University celebrated the one hundred and fiftieth anniversary of its establishment as King's College on Friday, Saturday, Sunday, and Monday, October, 28-31, 1904. A reception was tendered in the Low Memorial Library, and the University was thrown open for the inspection of alumni and friends.

DOCTOR A. V. PHELPS has been elected secretary of the Medical College of Ohio vice Doctor James G. Hyndman, deceased. Doctor R. C. Holmes has severed his connection with the Miami Medical College to accept the professorship of laryngology which was made vacant in the aforementioned college by the death of Doctor Hyndman.

NEW YORK CITY has a new public athletic field which was opened by Mayor McClellan on September 10, in the presence of about thirty thousand people. The field comprises one hundred twenty acres and is located in the Borough of Bronx. It is equipped with all the modern athletic requirements, including ample bathing and fishing accommodations. A feature of the park is the emergency hospital tent, where persons injured may receive prompt medical attention.

THE Pathological Society of Philadelphia held its annual meeting on October 13, at which time the following officers were elected: President, Doctor Alfred Stengel; vicepresidents, Doctors Joseph McFarland, W. M. L. Coplin, Allen J. Smith and M. P. Ravenel; secretary, Doctor D. J. McCarthy; treasurer, Doctor T. S. Westcott; recorder, Doctor D. L. Edsall. The president, secretary and treasurer, as well as some of the vicepresidents, were honored by reelection.

THE Medical Society of the County of New York held its ninety-ninth annual meeting on October 24, when the following officers were elected: President, Doctor Henry S. Stearns; vicepresidents, Doctors Floyd M. Crandall and Walter L. Carr; secretary, Doctor Van Doren Young; assistant secretary, Doctor Edmund P. Fowler; treasurer, Doctor Charles H. Richardson; censors, Doctors Wendell C. Phillips, H. S. Houghton, W. H. Park, Joseph Brettaner, and Egbert Le Fevre.

THE Phi Rho Sigma Fraternity recently tendered an elaborate reception to Doctors Walter R. Parker and R. Bishop Canfield, the new acquisitions to the University senate at Ann Arbor. The guests were limited to members of the medical faculty and their wives, with the exception of Regent and Mrs. Dean. The house was artistically decorated with fragant pink roses, and a dainty colation was served, while the musical strains of the Euterpe trio contributed effectively to the enjoyment of the occasion.

MAGISTRATE MACLEARY, of Philadelphia, has the credit of performing the first marriage by telephone in the city of Brotherly Love. The ceremony was conducted on October 18, the contracting persons being domiciled in the smallpox ward of the Municipal Hospital, where the groom was a patient. Notwithstanding the fact that he was seriously ill with variola, his fiancée insisted that the nuptial rite be executed, and, obtaining permission, the details were arranged. The questions and answers were passed along the line, the hospital superintendent, physicians and nurses witnessing the latter. Seven hours after the ceremony the man succumbed.

DOCTOR SAMUEL W. LAMBERT, of New York City, a graduate of the College of Physicians and Surgeons of Columbia University, class of 1885, was recently elected Dean of his alma mater, for the statutory term, vice Doctor John G. Curtis, who has been Acting Dean since Doctor McLane resigned in June, 1903. The new incumbent is Professor of Applied Therapeutics in the medical school, and by virtue of his elevation to the deanship becomes *ex-officio* a member of the Columbia University Council, of the Board of Trustees of Roosevelt Hospital, and of the Boards of Managers of the Sloane Maternity Hospital and of the Vanderbilt Clinic.

RECENT LITERATURE.

REVIEWS.

A TEXT-BOOK OF PHYSIOLOGY.*

DOCTOR OTT, the author of this book, is known to the medical profession chiefly through his researches bearing on the localization of heat centres. In the preface he states that the book is not intended to be a complete treatise on the subject, but rather an elementary work containing the facts of physiology that are necessary to the student in the practice of his profession. Doctor Ott does not consider laboratory technique an essential to the knowledge of the subject. He says that physiology is the basis of medicine, and its understanding is requisite to the study of pathology, and that for this reason laboratory technique has been omitted. We think that this statement is a least illogical and that the idea that it is apparently intended to convey is not such as to strengthen the merits of the work. The book may be styled a compendium of physiological knowledge. It is well written and the arrangement of the subject-matter is good, but the illustrations are fewer than are found in works of this class. The value of an illustration in such a subject cannot be overestimated. The book is attractively gotten up and it will find its field of usefulness chiefly in the high school, preparatory college and normal school. It is hardly exhaustive enough for the medical student. D. M. C.

*By Isaac Ott, A. M., M. D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. With 137 illustrations. Royal octavo, 563 pages. Bound in extra cloth. Price, $3.00, net. F. A. Davis Company, publishers, 1914-16 Cherry street, Philadelphia.

THE AMERICAN JOURNAL OF UROLOGY.*

This new periodical meets a distinct need. Its object is "to present a reliable record of the progress of genitourinary diseases of both sexes." Original articles have been contributed by "some of the most distinguished urologists of this country and in Europe. The leading contributions to the science of genitourinary diseases will be reviewed. In the editorial department, current medical topics of interest, connected with the sciences of urology, will be discussed." The opening editorial, from which we quote these statements, is expressed in exuberant language, and with unnecessary stress on the "scientific" aspect of "urology," but sounds brave and sincere.

Among original articles may be mentioned one on "Cancer of the Left Kidney—Endovesical Separation of the Urine—Nephrectomy—Recovery," by F. Cathelin, of Paris. This is valuable and interesting, and offers entertainment by the retention of the French idiom and by such expressive "corporosity," "hemoturgic," and "hemostasicated." Howard A. Kelly has a clear and authoritative paper on the "Renal Catheter as a Means of Detecting Renal and Ureteral Calculi," in which he shows the value of both *x*-rays and wax tip catheter, and the shortcomings of each. Winfield Ayres has a valuable preliminary article on the "Treatment of Catarrhal Pyelitis by Intrapelvic Injections." These two papers are accompanied by the discussion that followed their reading at the last meeting of the American Urological Association. A number of well selected abstracts complete the number.

In short, the new journal begins well. It promises to be of great assistance to all who have to deal with genitourinary diseases, and to have a beneficial influence in raising the standard of practice as well as of literature in that important line.

*Edited by Henry G. Spencer, M. D., under the general direction of members of the American Urological Association. The Grafton Press, Publishers. New York. Volume I, Number I.

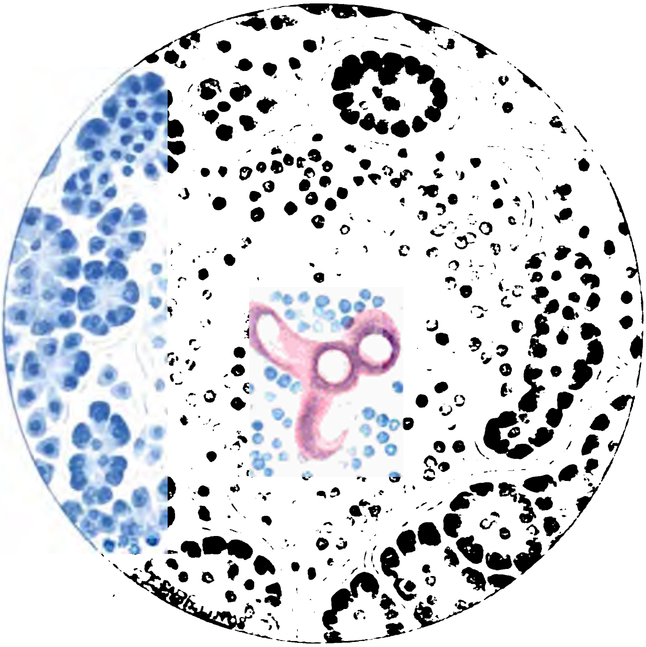

FIGURE I.

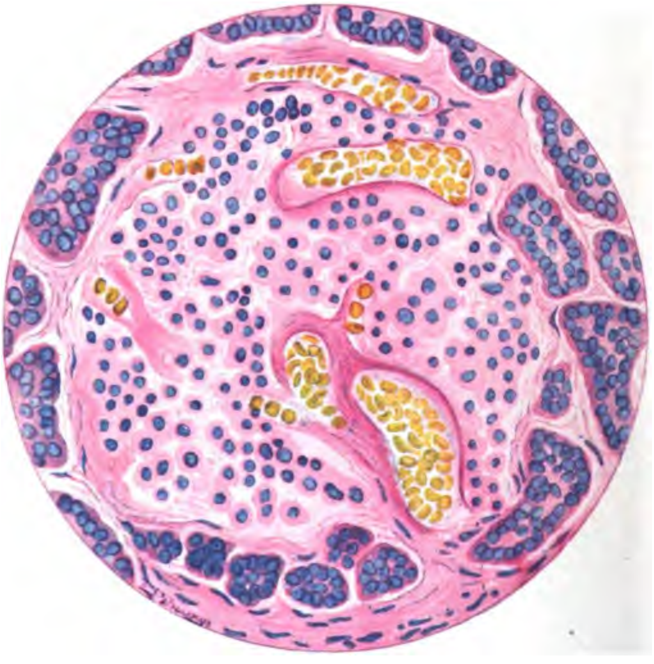

FIGURE II.

The Physician and Surgeon

A PROFESSIONAL MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

MEMOIRS.

THE PANCREAS IN AMYLOID DISEASE.

By ELMORE E. BUTTERFIELD, M. D.,
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At the present time, when the consideration of diseases of the pancreas has attained such a conspicuous place in the medical literature, it is singular that so little attention has been bestowed upon the condition of the gland in general pathological processes. It is the purpose of this paper to call attention to the fact that while there is little to be added to our knowledge of the localization of the amyloid substance in the other abdominal organs, the statements concerning the distribution of amyloid in the pancreas, which pass current in the usual text-books on pathology, are not commensurate with the advances in the study of the normal histology of the gland and the improvements in pathological technique. That workers of such eminence as Klebs, Orth, and Ziegler, not to mention many writers of special monographs on pancreatic disease, should content themselves with the broad, general statement that amyloid occurs occasionally in the smaller blood-vessels of the pancreas is evidence that these writers have accepted views handed down from one to the other, probably based on Friedreich's early observation. At the same time the majority of text-books contain the most painstaking descriptions of the distribution of the deposit in the kidney, liver, and spleen. Rokitanksy's conception of a primary amyloid pancreas with a like degeneration of the glandular epithelium is so out of harmony with our present knowledge of the genesis and nature of this material that it would be supererogatory to attempt to refute his statements.

To Friedreich[1] we are indebted for the first accurate observation of amyloid in the pancreas. He describes it as being found in the interlobular arteries of small and medium caliber and in the interacinar capillaries, but fails to find it in the veins. His material was derived from three cases of general amyloid disease; the lesion being noted in the pancreas in the first two; in the last no mention is made of the condition of the gland.

Hennings[2] makes the remarkable observation that in one hundred fifty-five cases of general amyloidosis he found the degeneration in the pancreas in three and nine-tenths per cent.

Kyber[3] found amyloid in the pancreas in the same situation that Friedreich found it and, in addition, in the basement membranes of the acini. Furthermore, he found it in all of the cases of general amyloid disease in which he examined the pancreas and, therefore, concludes that probably with more frequent examination of the organ in general amyloidosis, amyloid degeneration will not infrequently be seen.

Although Langerhans[4] described the "islands," now bearing his name, in 1869 neither Hennings nor Kyber mention them in connection with amyloid in the pancreas. Birch-Hirschfeld,[5] however, gives us an excellent description of the localization of amyloid in the pancreas. He figures it as occurring frequently in connection with amyloid in other organs although seldom reaching such a grade as to be recognizable macroscopically as translucent dots and lines on the cut surface. He notes the presence of the material in the vascular network of the interlobular cell-groups of Langerhans, whose blood supply suggests to him the glomeruli of the kidney.

Owing to the comparative obscurity into which the observation of Birch-Hirschfeld has fallen, especial attention is drawn to the condition of the islands of Langerhans in the cases here presented. The material was obtained from my first one hundred autopsies at the Garfield Memorial Hospital in Washington, and my thanks are due the pathologist, Doctor Nichols, for the control of the records. Fixation was secured in Zenker's fluid and alcohol; paraffin imbedding; hemotoxylin and eosin, carbol-toluidin-blue and thionin were employed for balsam mounts, while the usual metachromatic stains (gentian violet, methyl violet, methyl green, iodin green, et cetera) were used for investigation in glycerine.

* * *

Case I.—W. D., white male, aged forty. Clinical diagnosis; chronic parenchymatous nephritis and tertiary syphilis.

Urine Examination.—Quantity voided in twenty-four hours ranges between six hundred cubic centimeters and eight hundred cubic centimeters. Color, deep amber. Specific gravity, 1025-1035. Slight flocculent turbidity. One-quarter to one-half of moist albumen. Sugar absent. Microscopically, hyaline, finely and coarsely granular, epithelial, leukocyte, and fatty casts are always present. Casts exhibiting affinity for the "off color" in metachromatic dyes, not demonstrable.

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[1] *Virchow's Archiv*, Band XI, 1857.

[2] "Zur Statistik und Aetiologie der amyloiden Entartung." Dissertation. Kiel, 1880.

[3] *Virchow's Archiv*, Band LXXXI, 1880.

[4] "Beiträge zur mikroskopischen Anatomie der Bauchspeicheldrüse." Dissertation. Berlin, 1869.

[5] "Lehrbuch der pathologischen Anatomie," 1896-97.

Pathological findings.—Large white kidneys. Gummata in liver, lung, and periosteum of sternum. "Ham" spleen. Chronic indurative pancreatitis with localized multiple fat necrosis. Amyloid demonstrable by Lugol's solution in all of the organs with the exception of the lungs and heart muscle. The brain and spinal cord were not examined.

Microscopical Examination.—The kidneys show a typical picture of chronic diffuse nephritis, degenerative changes predominating, with amyloid in the glomerular capillaries, straight vessels, and beneath the tunicæ propriæ of the tubules coursing in the Malpighian pyramids. In the liver there are large necrotic gummata as well as miliary cellular ones, slight Glissonian cirrhosis, and amyloid infiltration of moderate grade. There is diffuse amyloid change in the spleen, the deposit in the pulp being especially abundant. No amyloid is observed in capillaries of lung or heart muscle.

In the pancreas there is marked excess of interlobular fibrous tissue containing many small round cells with corresponding atrophy of glandular tissue. All that remains in the areas of fat necrosis is a hematoxylin staining substance in a rough lattice work arrangement. The amyloid material is found beneath the endothelium of the small arteries in the interlobular fibrous tissue and of the capillaries in the acini, especially those in the islands of Langerhans. The appearance is usually that of a distinct continuous ring or stripe of homogeneous metachromatic substance, according to the manner in which the vessel is cut. In the small veins, however, it is only occasionally demonstrable and there as rather thin patches or interrupted lines. Amyloid beneath the tunica propria of the acinus is not observed. The epithelium of the acini not involved in the fat necrosis shows a slight fine vacuolation of the protoplasm; the cells in the islands are apparently normal in number, relations and morphology.

* * *

CASE II.—W. L., white male, aged sixty-three. The patient was admitted at night in a state of extreme asthenia and died before a diagnosis was made.

Pathological findings.—Colloid carcinoma of the pylorus of the stomach with circular perforation, and closure of the hole by adhesions between the anterior stomach wall and the liver. Syphilitic cirrhosis of the liver (gelappte Leber). Small, white, granular kidneys. Sago spleen. Pancreas rather firm but does not present any coarse pathological change. Amyloid demonstrated in the stomach wall, liver, spleen, kidneys, and pancreas. Heart muscle and the lungs are apparently free.

Microscopical examination.—The pylorus of the stomach shows colloid carcinoma. The mass of granulation tissue closing the perforation contains many new vessels, all of which present a thick coat of amyloid substance. In the liver there are broad bands of dense fibrous tissue without any definite arrangement, the intervening protoplasm being fairly well preserved; amyloid is present in the small arteries, and in the capillaries of the intermediate zone of the hepatic lobule. The kidneys are in a condition of chronic inflammation, interstitial changes well advanced; amyloid is found in the capillaries of the glomeruli, in the small arteries, and beneath the basement membranes of the straight tubules.

The pancreas contains a slight increase of interlobular connective tissue; the parenchyma is apparently normal; amyloid present in the same situation as in the pancreas of Case I, but in less degree.

* * *

CASE III.—M. J., colored female, aged thirty-five. Clinical diagnosis; pulmonary tuberculosis of the chronic ulcerative type, affecting both lungs, and chronic nephritis.

Urine examination.—Quantity in twenty-four hours, one thousand five hundred cubic centimeters to one thousand eight hundred cubic centimeters. Pale straw color. Specific gravity, 1005-1010. Albumen is always demonstrable, one-tenth to one-sixth by bulk. Sugar absent. Hyaline, finely granular, and occasional fatty casts. Casts with leukocytes attached are not infrequent. Occasional red blood corpuscles, moderate number of leukocytes and a few epithelial cells. Tubercle bacilli not demonstrable.

Pathological findings.—Chronic pulmonary tuberculosis with cavity formation and bronchogenic miliary dissemination. Large waxy kidneys. Sago spleen. Waxy liver. The pancreas is firm and white, and on application of Lugol's solution to the cut surface mahogany-brown lines are seen. The brain and spinal cord were not examined.

Microscopical examination.—The tubercular process is confined to the lungs. The kidneys present the changes of an acute exacerbation of a chronic nephritis, together with an abundant deposition of amyloid material in the vessels of the glomeruli and Malpighian pyramids, also beneath the tunica propria of the straight tubules. There is high grade amyloid degeneration of the liver and the spleen.

In the pancreas the glandular elements are well preserved and there is little or no increase in the interlobular connective tissue. The islands of Langerhans are normal in size but show abundant amyloid deposit in their capillaries. The small arteries throughout the gland are the seat of a similar process. Some of the small veins show slight patches of amyloid. This substance is not found in the vicinity of the basement membrane of the acinus (with the exception of the contiguous capillaries).

CASE IV.—J. N., white male, aged forty-five. The symptoms in this case were marked hepatic enlargement, occasional periods of jaundice, and extreme cachexia with a slight leukocytosis, fourteen thousand per cubic millimeter. The urine contained albumen in traces, hyaline and finely granular casts. "Amyloid casts" not demonstrable. Grape sugar was absent. The patient stated that several years prior to admission for the present illness he underwent an operation for hydatid disease of the liver, performed in Paris, by Professor Segond. In the absence of more definite symptoms a provisional diagnosis of malignant disease of the liver was made.

Pathological findings.—Hypertrophic cirrhosis of the type of Hanot. Healed infarcts in both kidneys. Sago spleen. Atrophy of heart. The pancreas is firm and of an opaque white hue. Amyloid demonstrable in the liver, spleen, kidneys, and pancreas. Brain and spinal cord were not examined.

Microscopical examination.—There is a well-marked excess of young fibrous tissue between the liver-cell columns. This connective tissue bears no relation to the portal tracts, and is fairly uniform in its distribution. There are numerous newly-formed bile ducts. Circumscribed collections of cells of the lymphoid type are not infrequently seen. While the small arteries in the portal tracts contain a coat of amyloid material the usual deposit in the capillaries of the middle zone of the acinus is wanting. The kidneys present the lesions of a low-grade chronic nephritis. Amyloid present in the usual disposition. The spleen follicles are almost entirely replaced by amyloid material. The heart muscle is the seat of brown atrophy; its vessels, however, are free of amyloid.

The pancreas contains a slight excess of interlobular connective tissue. The epithelium of the acini presents no departure from the normal. The islands of Langerhans seem larger than usual and their capillaries in many instances present definite coats of amyloid easily visible with the lower powers of the microscope. Many of the interlobular arteries and veins, and the interacinar vessels contain a thick mass of amyloid. The amyloid change in the tunica propria of the acinus is not observed.

* * *

From the preceding cases it will be seen that the situation of the amyloid deposit is in the walls of the small interlobular arteries, the interacinar capillaries as well as those in the islands of Langerhans, and occasionally in patches in the walls of the small veins. Amyloid in or beneath the membrana propria is not demonstrable, and as will be pointed out in a subsequent communication, is not to be compared with the same change in the kidney for reasons referable to pathological physiology.

The observation of amyloid in such a definite distribution in four consecutive cases of general amyloidosis speaks for the constancy of its occurrence in the pancreas and in a typical disposition.

The significance of these changes, from a practical standpoint, is little as it is extremely doubtful if the lesions within the islands could reach such a grade as to interfere with their function before the death of the individual from other causes. The absence of glycosuria bears out this statement. The mission of this note, then, is merely to emphasize the fact, omitted in most text-books on medicine and pathology, that amyloid occurs in the vascular apparatus of the islands of Langerhans, and it may be with as great frequency as in the capillaries of the glomeruli of the kidney.

* * *

FIGURE I.—Pancreas from Case I, showing amyloid material in the capillaries of an island of Langerhans. Objective, one-sixth of an inch; ocular, one inch. Alcohol fixation. Stained with carbol-toluidin-blue.

FIGURE II.—Pancreas from Case IV. An island of Langerhans containing amyloid vessels. Objective, one-sixth of an inch; ocular, one inch. Fixed in Zenker's fluid. Stained with hematoxylin and eosin.

ADVANTAGES OF THE SHORT INCISION IN IDEAL LAPAROTOMIES.*

By BAYARD HOLMES, M. S., M. D. CHICAGO, ILLINOIS.
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THE surgical incision is made with two ends in view: (1) to secure drainage, and (2) to give access to protected parts. In the former instance there is every reason for a liberal gash, while in the latter case the wound must be closed again, and many reasons exist for an incision as short as possible. In the former case drainage must be adequate, and a longer incision will not detract from this end, while a shorter one is fatal to its purpose. In the latter case the cut must be long enough to reach the protected part, and if it is longer it only adds to the mutilation of the patient, and the disadvantages of closure.

There are obvious cosmetic reasons why a short incision should be made for neurectomy of the supraorbital, the infraorbital and the inferior dental nerves, but in the case of a laparotomy the same reasons do not hold except in young women, but they are replaced by reasons of much greater importance, of which I propose to speak. In ideal appendicectomy, cholecystostomy, herniotomy, cystostomy of the urinary bladder, and öophorectomy for an ovarian cystoma, all of them uncomplicated by uncertainty of diagnosis, an extremely short incision prevents at once the disfiguring scar, gives adequate access to the part, prevents waste of time in suture, shortens thereby the anesthetic, prevents the operation hernia, allows the patient an almost immediate erect posture, and shortens the stay in the hospital. All of these advantages encourage early and therefore safe operative procedure, increase the number of cases subject to operation, diminish greatly the number of years of suffering by the multitude of patients who are deterred from seeking surgical relief by the long period of confinment, the risk of hernia, and the disfiguring scar which a long incision entails. It often appears better to a man to suffer the inconvenience of wearing a truss rather than go to bed for five or six weeks with a five or six inch gash in his groin. It often appears better to a patient to endure the pain, nausea, vomiting, and occasional confinement of a cholecystitis rather than spend a month or two in the hospital with the slow healing of the severed muscles on the lateral half of the abdomen. It often appears better to a woman to endure for a time the inconvenience of a small ovarian cystoma rather than a long stay in the hospital and a subsequent ventral hernia. To old people a long stay in bed is not only a source of discomfort, but also a source of actual danger to life, and in them the short incision affords the only possibility of giving surgical relief.

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* Read before the CHICAGO MEDICAL SOCIETY.

In a paper read before the Chicago Surgical Society eight months ago I described my use of the short incision in ideal appendicectomy, and recounted the results of this procedure in my hands. In the average individual the cut is not more than an inch and a quarter long, the time of the appendicectomy is not more than fifteen minutes. The patient is anesthetized upon the operating table with gas and ether, or with chloroform. The wound is closed with three layers of stitches; a continuous catgut suture in the peritoneum, two or three interrupted catgut stitches in the fascia, and one or two silkworm-gut stitches in the skin. The patient remains in bed only so long as he feels like it, sometimes an hour or two and sometimes until the next morning. The pain in the abdominal wall is trifling, and most pronounced in laughing; vomiting after the operation is relatively rare and never persistent. The erect posture and the freedom of the hospital takes away a large part of the inconvenience, which wears upon many patients after abdomnial operations. In the ideal operation there is no danger of hernia, no fear of hemorrhage, and no dangers connected with the mesentery or stump of the appendix. The patient, therefore, needs to remain in the hospital long enough to have the stitches removed; even this is not necessary, and many patients go out upon the street or are taken to their homes in perfect safety a day or two after the operation. The average stay of patients treated with the small incision and the freedom of the hospital does not exceed a week, and from this practice no harm has ever resulted, but rather the greatest benefit and satisfaction.

In cholecystostomy the incision is naturally longer, because most of the patients are fat and have a thick abdominal wall. Nevertheless, an inch and a half incision usually gives adequate access to the gall-bladder, and incisions of this length require no reduction for the attachment of the peritoneum to the wall of the gall-bladder. After the removal of the stones, if any, and the introduction of a drainage tube the patient is kept on his back only long enough to secure adhesions between the gall-bladder and the attached peritoneum. He is then given the liberty of the hospital. The skin incision in these cases, especially when there are renal or cardiac complications, is best made by the use of Schleich's infiltration, and the operation brought to an end under gas anesthesia. The duration of both stages of this operation is rarely more than twenty minutes. The stay in the hospital depends much upon the choice of the patient. Dressings must be continued until the wound closes or until a secondary cholecystectomy is performed.

When herniotomies are undertaken before the scrotum is filled with the abdominal viscera and the abdominal wall opened proportionately, an incision two inches long is adequate for its purpose, and if the fascia is brought together with sterile, twisted silk, properly handled, and the fat covering the cord is coaptated with a few fine interrupted stitches, there is no reason for keeping the patient in bed more than a day or two, or in the hospital longer than for ideal appendicectomy. The first operations which I observed of this sort were performed by Colci in Florence in 1898. His herniotomies consumed not more than four minutes under chloroform or twenty minutes when complicated by the absence of anesthesia or by accessory operations. His patients were either preparing for military service or were operated upon to relieve them of the inconvenience of the truss. In no other operation does the short incision, the brief anesthetic, and the ambulatory treatment appeal with more force to the patient. If the multitudes who wear trusses had not been alarmed by the protracted anesthesia, the long stay in the hospital, and the mutilating scars which their fellow sufferers have brought back from the operation, thousands would seek surgical relief.

Suprapubic cystostomy is frequently necessary for the temporary drainage of the urinary bladder in acute obstruction from senile prostatitis. In these cases the short incision under Schleich's infiltration, and the drainage of the bladder, offers the only relief consistent with the safety of the patient. The small incision makes the closure of the bladder certain, and prevents the establishment of a permanent fistula and its added misery to the patient and the patient's family.

In removing large ovarian tumors of a cystic nature it is the part of wisdom and good sense to make as short a cut in the abdominal wall as possible. A thirty pound cystoma can be as easily removed through an incision an inch and a quarter long in the tense abdominal wall as through one five or six inches long, and the inconvenience to the patient resulting from this short incision is little more than that which follows paracentesis.

The reputation of the surgical profession is established by the self-disseminating records of operations performed under the most favorable circumstances by men of the most painstaking methods and sharpest diagnostic acumen, by men of the most farseeing and conscientious counsel, of the most direct, expeditious and accurate technique, and this reputation makes possible the compromising efforts of the precipitous, enthusiastic and bungling tyro. Nevertheless, there is no element which adds to the comfort, safety and convenience of the patient which the true surgeon can afford to overlook. His own ease, convenience and comfort must not be considered. The possibility of a shorter cut, a shorter anesthesia, a shorter stay in the hospital, amply repays all the expedition, accuracy and intensity of attention which they call for. The reputation of the profession does not suffer more by the diversion of patients from the hands of the honest and skillful operator to those of the inexperienced and unscrupulous tradesmen by the process of fee-splitting than it does by the imported disregard of the patient's right to the gentlest, the most expeditious and sympathetic treatment which will meet the scientific indications to inflict the minimum amount of traumatism and cure the patient safely, quickly and pleasantly.

REMARKS ON THE SURGERY OF THE HAND.*

By HAL C. WYMAN, M. S., M. D., DETROIT, MICHIGAN.
PROFESSOR OF SURGERY IN THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY.

SURGICAL discussion as applied to particular organs of the body in contrast with the human body as a whole, may sometimes be misleading and imply some power of invoking the healing forces of man in behalf of a delinquent organ, without a general increment of health for the whole body. To heal a part we must strengthen the whole.

The many uses of the human hand make it particularly liable to injury and infections which surgery tries to cure. There are so many important structures in the hand, that the mere enumeration of them would make a paper much longer than I am inclined to inflict on the Academy now. The ablest anatomists have taken delight in writing their most favored essays on the hand, and seem never to tire of describing its intricacies and complexities. And, learned diagnosticians taking their cue from painters and sculptors, perhaps have found the hand not only an index of character but an object to be closely observed and studied in many serious chronic diseases. Thus we have an organ which is a clubbed hand, a claw hand, or hand with lumps and nodes, as its owner has phthisis, palsy, gout or rheumatism.

But let us treat it now as a useful part of man which has been smashed in a press, between rollers, in cogwheels or between cars. It is a mass of bone, tendons, fascias, muscles, nerves, vessels and skin. No matter how badly these tissues are broken and bruised, if enough live skin can be found to cover them in, the chances are that recovery with a useful member will follow. I have several times seen every bone and tissue in hand and fingers crushed to a flattened mass less than one-fourth inch in thickness, and recovery follow with a hand good enough to write and feed oneself. Amputation should not be performed until an effort has been made to encourage repair and restoration of the wounded structures. So easy is sufficient circulation reëstablished in the hand, that cases in which the palmar arches were damaged beyond recognition are almost sure to heal and be useful. Fingers may be crushed with hand or separately, and if there is skin enough to cover them that is warm and viable they will heal and as a rule be better than no fingers. It is only in the salebrous injuries of a finger, with its bones and joints, that the subsequent healing with a stiff and projecting habit brings about a condition in which the healed member is, by its constant getting in the way, more of a nuisance than a neat short stump. And, when the finger must be sacrificed, why not amputate it in the continuity of its metacarpal bone? Some surgeons say do this for men who do not work with their hands. If, however, the patient is a laborer or hand craftsman leave all the finger-stump you can lest its removal sacrifice some of the strength of the hand. One might think such advice is prompted by cosmetic reasons. The rich man demands a good looking hand, while the poor working man must have strength—manual force. True, but these men alike want the best hand that it is possible to have after amputation of a finger. If the finger must be sacrificed proximal to the second joint, I say take it off in the palm of the hand above the middle of the metacarpal bone, whether its owner be rich or poor. The lumbricales and interosseous muscles will contract union with adjacent bones and muscles, so that their offices will be transferred to fingers on either side, and the general strength of the hand will suffer only in small degree. Skin is the important thing to have in traumas of the hand—it is essential. It stands more stretching on the hand and finger than on any other part of the body.

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* Read before the DETROIT ACADEMY OF MEDICINE, November 8, 1904.

To dress a crushed hand it should, if injured to an extreme degree, receive very little manipulation. If bleeding freely, which does not stop during elevation—vertical suspension—effort may be made to catch and tie the bleeding vessels. Deep clots should not be disturbed. Superficial clots and debris of tissues should be wiped away with dry sterile gauze. Then sterile gauze should be soaked in hot sterile vaseline and folded in squares of four inches on a side. This should be placed about the hand in a way that will support the broken bones in the easiest sure approximation and likewise the soft structures. An envelope of sterile cotton an inch thick should cover all in and be secured by a roller bandage just snug enough to hold those dressings and not interfere with the circulation. I would put no water on the wounded hand to disturb and attenuate the antiseptic and healing properties of blood and serum which usually infiltrate crushed tissues. The dressings should be changed when they become saturated or the patient has pain and fever indicative of infection. When the latter condition has supervened the hand should be soaked in warm salt solution for fifteen minutes every six hours followed by the sterile vaseline dressing before described. There is in this treatment, doubtless an osmosis between the infected tissues of the hand and the waters of the warm bath, by which the cell growth is stimulated and toxins are eliminated. All necrosed tissue will come away in this bath with gentle pulling with dressing forceps. Care must be taken not to make the parts bleed during the dressing. If deep swellings appear in wrist or forearm careful watch on the tension of the deep structures must be maintained, and when it threatens distal circulation the bistoury must be used until the tension is relieved.

Simple fractures of the hand should be dressed with snug-fitting splints generally adjusted to the palmar aspect of hand and fingers after perfect reduction by manipulation (under anesthesia sometimes) has been secured. A splint of straw board faced with a cushion of soft plaster-of-Paris bandage, fits the inequalities of the palmar surface of the hand better than anything else. The dorsal surface of the adjusted fracture is best secured by straw board padded with cotton. If applied tightly at first to secure the plaster-of-Paris during the process of setting, the bandages must be loosened so that blood circulates freely in the hand while a moderate degree of swelling takes place.

Infected wounds of the hand come from pricks, hangnail, blisters, abrasions, gunshot wounds, burns, scalds, neglect of gloves. Treat them with gauze soaked in boric acid, one dram mixed with dilute alcohol, six ounces, eye and touch constantly alert for tension. See the case twice or three times a day the first three days. The simple lymphangitis will spend its fury by that time if it is not complicated by a premature incision. Streptococcus infection will be more likely to reveal its presence by more local disturbance and severer systemic ills, and call for free use of eliminatives. Calomel and salt have no superior. We should know, too, when a hand is thus infected that we must attenuate the systemic toxæmic by copious draughts of soups, gruels and water. Some medicines create a desire and capacity for diluent foods and drink in cases of infections. Tincture of chloride of iron, in constantly increasing doses—a drop at a time until a dram dose is taken every four hours with a pint of gruel or water—will be well borne and promote the recovery of the patient who must never be forgotten in our zeal to work out the best there is in operative surgery for a wounded or infected hand.

ACCIDENTAL MULTIPLE VACCINATION OF THE FACE ASSOCIATED WITH PSORIASIS.

By DAVID MURRAY COWIE, M. D., ANN ARBOR, MICHIGAN.
FIRST ASSISTANT IN INTERNAL MEDICINE IN THE UNIVERSITY OF MICHIGAN.

THE following is a brief report of a case seen in private practice.

The patient is a young lady of twenty-five, whom I vaccinated November 13, 1904, by the clean, shallow incision method. There was evidence of a take on the third day after vaccination and the vesicle followed a typical course.

Monday, November 21, I was called to see the patient. She was complaining of headache and slight nausea. The temperature was but slightly elevated (100°) and the pulse was normal. The arm was quite sore and there was a wide areola of injection round about the vesicles, four in number. Physical examination was entirely negative.

On Wednesday, the 23d, patient called at my residence with two well-defined vesicles, the size of a pea, on her face, one on the forehead midway between the hair line and the brow and a little to the right of the median line, the other, and the larger, on the right cheek. The lesions looked like vaccination lesions, but as a matter of precaution I confined her in her room entirely away from the family for further observation.

For a number of years the patient has had psoriasis, particularly on the forehead. This gives rise sometimes to much itching, and since the vaccination the patches have increased in number and irritability. The patient says that the night previous to my first visit the vaccination was so irritable that she could not keep from scratching it. This resulted in the rupture of one of the vesicles. The psoriasis patches also became irritated and more aggravated in character, breaking out on other parts of the body, notably over tthe extensor surfaces of the left elbow. Nor could she restrain herself from scratching at these places.

On Tuesday morning, November 24, I still felt confident that the patient had inoculated herself but took the further precaution of consultation. Professor Dock saw the case with me later and concurred in the diagnosis. The patient was accordingly released from her confinement.

On Wednesday, November 30, Professor Dock called with me again. The lesions had now formed typical vaccination crusts and were in the same stage of development as those on the arm. The larger lesion—on the cheek—had a crust perfectly round and about three-eights of an inch in diameter. In the interum since our last visit the swelling of the forehead was very great, so much so that the eyes were almost closed and the nose widened so that the patient's eyeglasses could not be held on.

Smallpox was excluded because of the already advanced vaccination on the left arm and the absence of other lesions on the body. The symptoms complained of at the time of my first visit could be attributed to the vaccination, symptoms I have met with in large numbers of vaccination cases, or to the fact that the patient has had for some time similar digestive attacks. The patient must have inoculated herself with the right hand as the lesions on the arm could not be reached by the left hand. The right side of the cheek and forehead are most likely to be scratched with the right hand. The patient made an uneventful recovery. Only slight scarring resulted.

THE EMPLOYMENT OF PORCELAIN IN DENTAL SURGERY.

By GEORGE F. BURKE, D. D. S., Detroit, Michigan.

Porcelain is prepared from kaolin, a very fine white clay which is comparatively rare. It was first discovered in China and later was found in quite large quantities in England. It is a hydrous silicate of alumina.

Porcelain has proved to be of inestimable value in dentistry for restoring lost tooth structure. Although this fact has been known for nearly two decades the last four or five years have seen the greatest advancement in its application. Porcelain bodies, furnaces, and instruments have been greatly improved and numerous obstacles have been overcome.

When manufacturers began the work of perfecting procelain it was not an easy task to make a preparation that was generally satisfactory. Strength, density, translucency, and fixity of colors were qualities sought, and it was only after a vast deal of hard labor that a product was evolved which filled the requirements.

With porcelain it is possible to restore the largest cavities in either front or back teeth. Very often it will happen that when a large metallic filling is placed in a tooth there is a tendency for the walls around it to break away, but with a porcelain inlay the cement inside the walls of the tooth tends to strengthen them.

Decay is much less likely to take place around porcelain than around gold or silver. In fact it is the unanimous opinion of nearly all porcelain workers that decay practically never takes place around poreclain inlays, and the time that has elapsed since the work was done in many cases has been sufficient to justify these statements. Porcelain is also generally regarded by those who have used it most extensively to be the best nonconductor of thermal changes that has yet been employed as a filling material. Sensitive teeth that have been filled with gold, upon being refilled with porcelain lose their sensitiveness and the patient becomes unaware of its presence.

When people are extremely nervous and it is impossible for them to have gold inserted, porcelain will be found to be a most excellent thing both for patient and operator, because with it permanent work can be done. In the teeth of children from eight to ten years of age, and on through the years of development up to sixteen and eighteen years of age, where it would be almost criminal to place gold fillings, and where cement wears away so fast as to be dangerous, permanent work can be done with porcelain. Those teeth that are so badly broken down that their walls will not support a metallic filling, and which are condemned to be crowned as a last resort, can be saved for a great many years of service with porcelain inlays.

It may be further stated that there is no question of the more effectiveness of the aseptic conditions of the cavities attained and maintained by the manipulations that are necessary for the reception and the subsequent setting of porcelain inlays. While the dangers of contaminating a tooth cavity with pathogenic bacteria is slight by the employment of cement, it will even here, as in the other branches of dentistry, be necessary to avoid such possibility by bringing the principle of asepsis to bear upon every detail of the operation. Experience has taught us that in dentistry, as in other branches of surgery, our success is proportionate to the degree of sterility we produce, whether consciously or not.

Porcelain inlay work will be sought after chiefly because of its esthetic possibilities. It appeals to those who have extensive displays of gold in their front teeth, for by the skillful manipulation of porcelain the color of the natural tooth can be so closely matched that it cannot be detected at conversational distance. Thus the ever conscious annoyance to the sensitive nature of one who has been so unfortunate is done away with.

The necessity of taking the pains that is required of the porcelain operator in order that he may make a success of his work, soon becomes a fixed habit which he carries into his other work, where, perhaps, he may have been less careful before.

In a great many mouths, where gold and silver have been extensively used, there are electrical disturbances, especially where a gold filling or crown comes in close proximity with amalgam. From these conditions very sensitive teeth quite frequently result, and where a change of filling material is indicated, porcelain is to be recommended.

Porcelain in the hands of a well-trained and careful operator is an assured success. It is not a fad; it will stay with us, and more than this, there is a class of cases wherein porcelain as a filling material is so far superior to anything else for the restoration of lost tooth structure, that it becomes imperative for every progressive dentist to recognize these cases when they present themselves, and to possess the necessary skill to insert a practical porcelain inlay.

DUODENAL ULCER CAUSED BY PRESSURE FROM STONES IN GALL-BLADDER.*

By GEORGE H. CATTERMOLE, M. D., BOULDER, COLORADO.

THIS paper is based on the pathologic findings in a case which came to autopsy in August of the present year. I will give you such history as we were able to obtain, then review the special features of this case and present the pathologic specimens. The case history is as follows:

A man, aged sixty years, began to develop arthritis deformans at the age of twenty. This had resulted in marked deformity of the hands and feet, and there was ankylosis of the elbows, hips and knees. He has not been able to dress himself without assistance for thirty years, but during that time he has had no acute sickness. His appetite and digestion have been good for a man who could take no exercise.

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* Read befere the COLORADO STATE MEDICAL SOCIETY, October 4, 1904

His bowels have moved regularly. He has not had colic, nor has his blood ever been noticed in the stools.

For the past six months he has had occasional attacks of nausea, and for the past few weeks would sometimes vomit a little mucus. He had ridden from Nebraska to Colorado in a wagon, and for the last week would be nauseated when helped out of the wagon. For three or four days prior to death he had been constipated. On August 19 he took medicine to move the bowels; this acted on August 20. In the evening of August 21 he was taken with sudden pain in the region of the liver and extending behind to the right shoulder. A physician was called who gave him morphin hypodermically; this relieved the pain. He was given an enema to move the bowels without result.

The following morning the patient was placed in the wagon and they moved on for about ten miles, but his condition became so bad that he was placed aboard the train at Marshall and sent to the University Hospital. A physician who saw him in the afternoon of August 22 found him pulseless and gave a hypodermic of strychnia. The patient was practically moribund when he arrived at the hospital at 7 P. M. There was no pulse at the wrist; he could not swallow water; the abdomen was very much distended and tympanitic, especially over the liver; there was no peristalsis, nor tumor. He said he had no pain. There had been no vomiting nor passage of gas or feces during the day. He was very restless, and begged to be allowed to sit up. He died at about 8 P. M., August 22.

An autopsy was held soon after death. On cutting through the peritoneum, just below the ensiform cartilage, a large amount of gas and brownish fluid escaped. All serous surfaces were congested and there was considerable deposit of fibrin on the intestines and parietal walls. About the liver, stomach and duodenum there were adhesions, showing where fluid had been walled off. The gall-bladder was contracted down over two large gall-stones, and where the gall-bladder came in contact with the duodenum, an ulcer had formed, perforating the bowel. This ulcer was on the upper surface of the duodenum, about one-half inch from the pyloric opening of the stomach. On the peritoneal surface it was one-half inch in diameter, the edges beveled in so that the opening through the mucous membrane was about one-quarter of an inch in diameter. The edges of the ulcer were hard and fibrous, showing a long continued irritation.

In considering the normal course of round perforating ulcer of the duodenum, it seems to have practically the same etiology as ulcer of the stomach. It is seldom found below the common opening of the bile duct and pancreatic duct. The reason given for this is that "it probably follows nutritional disturbance in a limited region of the mucosa, which results in the gradual destruction of this area by the gastric juice." This holds good for the upper part of the duodenum as well as for the stomach. But in this patient the ulcer evidently began by erosion of the peritoneal surface and later by digestion of the mucosa.

Chlorosis, anemia, and cachectic states, which are commonly associated with ulcer of the stomach, are not often found in persons suffering from duodenal ulcer.

Extensive burns of the skin seem to cause ulcer of the duodenum; they were found in sixteen of one hundred twenty-four patients dead from such burns. "Kyanitzki has separated from the blood of animals, suffering from extensive burns, a toxin which, when injected into other animals, will cause (among other phenomena) duodenal ulcers." (Johnston: "American System of Practical Medicine.")

Pressure of the costal margin against the stomach wall is thought to favor the development of ulcer by inducing local anemia and atrophy of the mucosa. This theory is borne out by the frequent occurrence of ulcer in persons following occupations which require a stooping position. If pressure of the costal margin favors ulcer starting in the mucous membrane, we may expect that pressure of any kind may sometimes cause ulcer starting on the peritoneal surface, as in this case. It is not easy to understand why pressure between the gall-bladder and duodenum should cause atrophy and ulcer of the intestinal wall and have no effect on the wall of the gall-bladder. Ulcer seems to be favored by lithemic conditions (diminution of the normal alkalinity of the blood), and in this man with arthritis there was no doubt a vitiated condition of blood and tissues.

Experimentally, embolism has proved to be a cause of ulcer. "Many cases have occurred in connection with disease of the heart or of the blood-vessels." Ulcer of the stomach is from nine to thirty times more frequent than ulcer of the duodenum. Writers differ as to the absolute frequency of duodenal ulcer. Guy's hospital reports show that it was present in only 0.4 per cent of all autopsies; while Letulle found it in seven per cent of fifty-two cadavers taken at random. Probably the majority of duodenal ulcers heal without having been diagnosed, and the scars, or even open ulcers, are overlooked in an ordinary autopsy.

We are all familiar with the pathological anatomy of peptic ulcer. It usually begins in the mucosa; the floor of the ulcer may be formed by the submucosa, the muscular coats, or where it perforates, the floor may be formed by the adjacent organs or tissues. The ulcer may be round or oval, and its edges are smooth or ragged. The ulcer is usually broadest on the mucous surface and grows narrowest toward the peritoneal surface (funnel-shaped).

The interesting features of this particular case are: That the ulcer was caused by pressure from an adjacent organ. The pressure was probably long continued, as the stones are large and the edges of the ulcer are fibrous, showing prolonged irritation. The ulcer is largest on the peritoneal surface, sloping toward the opening in the mucosa. It is probable that the sedentary life of this crippled man lessened the danger of early perforation. There was evidently some escape of substance from the bowel weeks or even months prior to his death, but this substance from the bowel was walled off from the general peritoneal cavity, until the jolting of the wagon finally broke down the protecting adhesions and allowed general infection of the peritoneum.

The symptoms usually seen in peptic ulcer are: Indigestion, nausea, vomiting, hemorrhage and pain. In this man's case digestion was good; there was some nausea at times during the last six months; vomiting had only been present for about two weeks; there was no hemorrhage, so far as his friends knew; there had been almost no pain until twenty-four hours before death.

Many ulcers starting on the mucous surface of the duodenum probably run a course similar to this one. In cases that are recognized as duodenal ulcer, perforation is common, and almost invariably fatal. "Of two hundred sixty-two cases reported by Collins, perforation occurred in one hundred seventy-five."* The majority of the cases where perforation occurs prove fatal within twenty-four hours. Just how many duodenal ulcers may heal or continue to exist without causing serious symptoms is uncertain. If we credit Letulle's statement that seven and eight-tenths per cent of cadavers show evidence of duodenal ulcer, we must believe that it is a very common condition, and that in the great majority of cases it causes few symptoms, or else the symptoms are ascribed to some other cause.

As Mayo has pointed out, there are many ill-defined conditions caused by gall-stones, and this case is another added to the list.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, DECEMBER, 5, 1904.

THE PRESIDENT, DANIEL S. DOUGHERTY, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

DOCTOR EARLE CONNOR read the paper of the evening, which was entitled, "Inflammation of the Optic Nerve Due to Alcohol and Tobacco Poisoning." He said that inflammaation of the optic nerve due to alcohol or tobacco poisoning, or both, may be acute or chronic. The acute cases are the result of the ingestion of an overdose of the poison. The symptoms are a rapid reduction of the visual acuity, even to light perception only, within a few days. Vision is subject to variation, and partial recovery may precede permanent blindness. The ophthalmoscope shows a congested nerve head, with blurred edges, dilated veins and perhaps some small hemorrhages. Prognosis is usually bad, but a useful degree of vision may follow early and persistently energetic treatment.

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* Johnston; *loc. cit.*

The chronic form yields to abstinence from the exciting cause. There is variation in vision, and the prognosis depends on the early recognition of the disease, so that the inflammation may be checked in its incipiency. The pathologic changes in the chronic cases he thought degenerative, but said that differences of opinion existed regarding this point. Prognosis is good in the first attack, but proportionately less so in recurrent attacks.

Treatment consists in total abstinence from the toxic agents known to produce the disease. Active diaphoresis assists in the elimination of the poison. Strychnia pushed to the limit of toleration is probably the best remedy, and the iodides are of value in stimulating the absorption of exudates. Plenty of sleep and fresh air, good food and proper exercise are also necessary.

DISCUSSION.

Doctor George B. McAuliffe: I think the optic nerves are affected more by pipe smoking than by any other form of tobacco. I have seen one patient in whom this condition had been produced by cigarette smoking.

Doctor Perry B. Hough: I wish to emphasize the fact that a slight amount of alcohol will keep up the inflammation of these nerves. The patient may have been abstaining absolutely from alcohol, and have been treated with strychnia and hydriodic acid, with marked improvement, and he will return to the doctor with a decided relapse, and questioning will reveal the fact that he has had one or two drinks. The patient must abstain absolutely from the exciting cause, if there is to be any permanent improvement.

REPORTS OF CASES.

PATIENT DEMONSTRATING THE USE OF THEOCIN IN THE TREATMENT OF NEPHRITIS.

Doctor Adolph Reich: I wish to present this patient, a boy eight years of age. His family history is of no importance, and he had always been well himself until he developed measles at three years of age. When one year old he began to drink beer and California wine at supper time. From half a tumblerful he gradually took a tumblerful of either beer or wine, and was intoxicated several times from the effects of brandy and whiskey. In March, 1903, he developed scarlet fever, which was followed in May by nephritis, showing slight edema under the eyes and face. The urine contained considerable albumen, large epithelial casts and fine granular casts. His condition grew gradually worse, until, in July, there was general anasarca, the abdomen at the umbilicus measured thirty-five inches, and there was edema over the right lung, posteriorly below the angle of the scapula. There was a pleuritic exudate on the left side, up to the sixth rib; pericardial dullness was also increased. The patient was very short of breath, temperature was 101° and pulse 96. He passed four ounces of urine in twenty-four hours. The treatment up to this time had consisted of milk diet, cereals, Vichy water, calomel, acetate of potash, digitalis and hot baths. The treatment was now changed to diuretine and jalap, and to relieve the distress he was tapped and five and one-half quarts of water removed. The urine increased at once to eight ounces per day, but gradually the abdomen filled again, in spite of high salt irrigations, hot packs, et cetera, and it was necessary to tap him every two weeks. After tapping him, a number one soft rubber catheter was left in the abdomen for constant drainage, and another time five strands of silkwormgut were put in, but each time a localized peritonitis made its removal necessary in from twelve to twenty-four hours. In September his condition continued the same, with the addition of a distinct caput medusæ. He was tapped for the last time on November 18, and on December 1 he was given his first dose of theocin, which caused an increase of urine to a cupful a day, and in four days, to four cupfuls a day. He was left in this condition for a few days, when the abdomen began to swell again, and the urine dropped to eight ounces, when theocin was again given for one and one-half weeks. The anasarca disappeared completely, and never returned, and now (a year later) the urine contains no albumen. Two and one-half grains of the theocin were given four times a day.

RESULT FROM OPERATION FOR CLEFT PALATE.

Doctor John A. Bodine: I wish to exhibit a girl eight years of age, with a result from an operation for cleft palate. These operations are regarded by surgeons in general with trepidation, because of the many mechanical difficulties in effecting a closure and of the many disappointments in the healing. Tension upon the stitches after suturing, plus an infection in the suture-line always present in the mouth, are the main causes of failure. In the obviation of tension on the flaps lies the thoroughness of the denudation of the mucoperiosteal flaps. Some study should be given to the position of the foramen accommodating the exit of the anterior palatine artery, because destruction of this vessel will cause sloughing of the flaps. If Rose's position is thoroughly understood, there is no interruption of anesthesia and no entrance of blood into the larynx. As the soft palate approaches the hard palate, it divides into two layers, the upper layer covering the floor of the nose, the lower one the roof of the mouth. When the soft palate has been thoroughly separated from the posterior edge of the bony hard palate the upper layer or that continuous with the floor of the nose, is divided. As the preservation and improvement of speech is one of the incentives to these operations, it is necessary to preserve the integrity of the tensor palati and lavator palati muscles. The old method of making a wide lateral incision into the soft palate of course destroys these muscles, and disappointment in the improvement of speech results inevitably. Instead of cutting these muscles, the hamular process of the sphenoid bone around which winds the central tendon of the tensor palati muscle should be fractured, which throws this muscle out of position temporarily, while healing takes place. Later on, this same muscle is able to do its work in assisting the child to phonate correctly. In my opinion, it is fatal to success to use catgut, kangaroo tendon or silkwormgut for sutures. The absorbable ones are uncertain in stability, and almost certain to result in infection, while the silkwormgut cannot be tied with smoothness, and the projecting ends irritate the child's tongue. Silk, in my opinion, is the proper material, but the capillarity of the silk strands should be destroyed by immersion in tincture of benzoin before use. In the after treatment of the child, it is well to keep the atmosphere moist with a steam kettle.

DISCUSSION.

Doctor Daniel S. Dougherty: I have performed one or two operations for cleft palate, using Doctor Bodine's method, and the results have been very satisfactory.

Doctor Francis J. Quinlan: It is rather difficult, after the successful performance of an operation for cleft palate, to teach a child as old as the patient exhibited by Doctor Bodine to use muscles which have either been completely atrophied or have never been used. These muscles should be stimulated in some way, as the resultant vocal effects are among the most important results of these operations. These children should be especially drilled in saying words that they never have pronounced before, especially words which require resonating force.

RESULTS OF SCHWARTZE-STACKE OPERATION FOR MASTOIDITIS.

Doctor George B. McAuliffe: I desire to present a young girl on whom the Schwartze-Stacke operation had been performed for otorrhea. A double Stacke operation was performed, and while it did not take the preservation of hearing into as much consideration as the prevention of cerebral metastasis, nevertheless the girl is able to hear ordinary conversation without betraying any aural disability, while the cosmetic effect of the operation is furthermore perfect.

DISCUSSION.

Doctor Earle Connor: While the wound is very extensive, if the girl retains any part of her hearing, the operator is to be congratulated upon the result.

Doctor Dennis J. McDonald: Usually after a radical operation the patient is unable to hear, and consequently this case is very interesting.

ULCERS OF THE LARYNX FOR DIAGNOSIS.

Doctor George B. McAuliffe: I also wish to present a man who had four ulcers on the throat, two anterior to the posterior pillars and two on the posterior wall of the pharynx. Examination of the tissue by a pathologist failed to reveal anything characteristic, and there was no history of tuberculosis, syphilis, or carcinoma. I have been unable to make a positive diagnosis, and would like to know if anyone in the Society has had a similar experience. Inunctions of mercury benefitted this patient greatly for a week, and for lack of a better diagnosis it was categorized as a tertiary specific lesion.

Doctor Francis J. Quinlan: For a long time I have divided ulcerations of the throat into diphtheric, malignant, specific or tubercular, but after reviewing the literature on this subject some time ago, I discovered that the Germans have an idiopathic ulceration. There is a form of pharyngitis in which the system is much run down, and the tissues of the pharynx sometimes present superficial erosions and then break down and these little sores result. I have treated a patient presenting a similar condition to that shown by Doctor McAuliffe's patient with arsenic and the patches disappeared completely. I think the average physician too apt to class these idopathic ulcerations as syphilis.

Doctor Daniel S. Dougherty: I have seen a patient, a young girl, fifteen years of age, presenting almost the identical appearance of the patient presented by Doctor McAuliffe. She had been examined by several laryngologists, and examination of her chest, sputum and tissue were negative. Under iron and arsenic the condition cleared up.

CASE OF BILATERAL CERVICAL RIBS.

Doctor Edward A. Aronson: I desire to present this middle-aged woman who came to the clinic two weeks ago, complaining of a neuralgic pain in the back of her head, shoulders and back. Examination of both sides of the neck revealed the presence of a hard, bony growth, more prominent on the left side, and over which a marked pulsation could be felt, with a distinct thrill. On examining the more prominent bony growth on the left side, it was found to extend backward to the vertebral column. An *x*-ray photograph of the patient confirmed the diagnosis of bilateral cervical ribs. The patient complained that the pain was most marked at night, shooting downward to the left hand, and the rib on this side will be resected.

DISCUSSION.

Doctor Milton Franklin: I wish to exhibit a radiograph of a case almost identical with that of Doctor Aronson. The patient noticed a bony protuberance on the left side of the neck. There was no pain, but there was a distinct bruit and a thrill. The radiograph revealed the presence of an extra rib on either side of the vertebral column. On the left side there was an extra bone between the vertebra and the rib. The rib articulated with the sternum in the usual manner of the first rib, and corresponding with the second rib was an extra rib which ended in a wedge-shaped point passing onward and downward. On the right side the extra rib came first. It was in all respects similar to that on the left side, and the second rib resembled an ordinary normal first rib.

DEMONSTRATION OF SPECIMEN OF COMPRESSION OF LARYNX DUE TO SARCOMA.

Doctor Daniel S. Dougherty: I wish to exhibit this specimen. The patient presented himself at the dispensary some weeks previous to operation, suffering from extreme dyspnea and some emaciation, but no pain and no dysphagia. Examination of the larynx revealed a large mass on the right side, involving the glands of the neck, crossing over to the larynx and involving the arytenoid on the opposite side. The patient appeared a week later with more pronounced symptoms, and the condition was then diagnosed as sarcoma. Professor Quinlan, who saw him shortly after this, agreed in the diagnosis of extringent sarcoma, and advised a tracheotomy, which was performed the same evening, under chloroform anesthesia. The knife was plunged in rapidly, the tracheotomy tube inserted, and the patient took one long breath, expelled the air and expired. I think that the patient's death might possibly be explained by the reaction which followed the shock to the inhibitory nerves and paralyzed the heart. One side of the larynx was pressed almost to the opposite side, the lumen was entirely diminished and there was no breathing space whatever.

DISCUSSION.

DOCTOR FRANCIS J. QUINLAN: I advised the operation performed by Doctor Dougherty, but now think that local anesthesia might have produced more favorable results than did the chloroform. In these cases, under general anesthesia, there seems to be a vasomotor paralysis, and the mucous membrane becomes more or less edematous. There was probably an encroachment upon the constricted lumen of the larynx, and a certain amount of mucous exudation, and I believe that cocain or some anesthetic used on the outside of the throat might possibly have produced much better results.

DOCTOR JOHN A. BODINE: I was present at the operation and advised against the use of cocain as a local anesthetic because of the depth of the trachea in a thoroughly swollen neck, where the tracheotomy had to be done so low that the large venous trunks at the root of the neck were in danger of being cut. There was a possibility of uncontrollable hemorrhage, that made, in my opinion, the use of local anesthesia in this case unadvisable.

DOCTOR VICTOR C. PEDERSEN: It is well known that when a patient has a respiratory difficulty in a conscious state, the difficulty will be increased in unconsciousness under any general anesthetic. I therefore think all these cases should receive combined anesthesia, morphia freely, cocain as far as possible, and then some general anesthetic. In the case of the patient under discussion, however, cocain would probably have had to be abandoned because of the depth of the wound. I would advise administering a large dose of morphin prior to anesthetization in these severe cervical cases. At the Roosevelt Hospital I have anesthetized many patients with serious throat lesions, and by combining local with general anesthesia and morphin, have been very successful. In one goitre case, only half the growth could be removed at one sitting. Although the trachea was involved and deformed, the patient was kept quiet under morphin, and just a little ether for stopping the pain which the morphin failed to alleviate.

DOCTOR DANIEL S. DOUGHERTY: The idea of local anesthesia was discussed at the time of the operation, but with local anesthesia the cooperation of the patient was required to a greater or less extent, especially in tracheotomy, and the patient was very nervous and exhausted and almost dying, and could have given no help whtatever. Doctor Bodine, who was present at the operation, agreed with me that the possibilities were that the mass could not be dissected out under local anesthesia, and chloroform was therefore administered. In regard to position, it was necessary to keep the patient's head in a particular position to allow him to get any inspiration whatever, and the operator worked with the chin slightly flexed.

REPORT OF AN OPERATION FOR MASTOIDITIS.

Doctor Francis J. Quinlan: I wish to report the history of an infant seven months old on whom I operated recently for mastoiditis. When I first saw the patient there was an entire absence of symptoms, except a small nodule at the lower junction of the ear. Temperature, pulse and respiration were normal. The patient's mastoid process was opened, and the pus poured out, the entire epiphysis being in such a condition that it appeared ready to fall in, and so soft that it could be scraped away. This was hurriedly done and the operation was rapidly concluded, as the child's pulse ran up to 212 at the operation. The point I wish to emphasize is the necessity of making an exploratory incision under proper aseptic conditions, despite the absence of symptoms, as twenty-four hours' delay might make a decided difference in the prognosis of the case. The patient was doing nicely, with a normal pulse and temperature, a week after the operation.

GANGRENE FOLLOWING THE USE OF STOVAINE.

Doctor Daniel A. Sinclair: I desire to show a case of gangrene of the skin of the penis following the use of stovaine as a local anesthetic for circumcision. This is one of four cases on which stovaine had been used. The strength of the solution was two per cent. In one instance a simple meatotomy was performed, and only ten minims of a two per cent solution were used. The patient complained of a sensation of sickness and nausea in the stomach, and as fainting was imminent, had to be placed in the prone position. This case, at the end of a week, showed gangrene of the glans penis at the site of injection of the stovaine. The two following cases were circumcisions. The patients were both strong, healthy individuals: the first experienced pain during the stitching process, but did not feel faint or sick; the second, a strong, healthy young man, about thirty years old, weighing about one hundred ninety pounds, was stovainized with a two per cent solution also, and he complained of pain from stitching at the latter half of this process, and after the operation was completed complained of severe nausea and sickness in the stomach, and syncope being imminent he had to be placed in the prone position. These two cases showed a gangrenous area almost identical, the gangrenous process extending along the skin of the penis at some points a quarter of an inch, at others up to three-quarters of an inch at least, and although the operations were performed about a month ago, the patients have not yet recovered. The conclusions are that stovaine is not as efficacious as cocain in its anesthetizing effect and is as toxic as cocain, produces gangrene when used in this strength, and is consequently a most dangerous drug. I have used it in a case of ischiorectal abscess, and the man complained most bitterly of pain, claiming that he felt every step of the operation.

EXHIBITION OF INSTRUMENT.

Doctor George B. McAuliffe: I here present a new adenoid forceps, the principal feature of which is the safety with which it can be used by beginners in this line of work. Mutilation of the parts, except the adenoids, is avoided. The instrument can be taken apart and thoroughly sterilized, and the parts can be interchanged, thus making it possible to use different sized cutting blades with the same handle. The cutting blades are hinged behind and are swivelled on the handles.

DISCUSSION.

Doctor Francis J. Quinlan: In my opinion the angle is a little too sharp. Most of the growth comes on the superior and posterior wall, and I think the instrument would be much improved if the angle were such that in resting on the incising path it would remove the tissue from the growth focci. I think, however, that the instrument is very practicable.

Dootor Dennis J. McDonald: I have seen the forceps used at operations, and they were thoroughly practicable, but of course do not dispose entirely with the use of the curette. I think this instrument, used in connection with Doctor Quinlan's forceps, would bleed any case of adenoids, and I believe that one instrument should be used to supplement the other.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., D. Sc., Ann Arbor, Michigan.
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AND
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FIRST ASSISTANT IN MEDICINE IN THE UNIVERSITY OF MICHIGAN.

CROUP DUE TO STAPHYLOCOCCUS.

F. P. Anzinger (*American Journal of the Medical Sciences*, November, 1904) reports three interesting cases of this kind, with tracheotomy, two of them ending fatally. Cultures and inoculations proved the condition to be due to staphylococci of high pathogenicity, the species of which could not be determined. Though obstructive symptoms were marked there were no false membranes. Toxic symptoms were marked. Two cases were suspected to be diphtheria, and antitoxin was given in five thousand unit doses, but with negative results. The author concludes that "The staphylococcus, a common denizen of the throat, may, under favorable conditions, give rise to grave symptoms. The rapidity of onset and severity of symptoms may at times suggest diphtheria. Antidiphtheric serum, although to be used, will be of no service. Reliable bacteriologic examination is necessary to correct diagnosis."

PNEUMOCOCCUS ENDOCARDITIS.

HERBERT R. PREBLE (*American Journal of the Medical Sciences,* No·ember, 1904) has made a valuable study of this subject, based on three cases now reported and an extensive investigation of the literature. He gives the results in a very complete summary, most of which we quote in full:

"Endocarditis complicates pneumonia in about one per cent of all cases and five per cent of fatal cases. Pneumococcus endocarditis makes twenty-five per cent of all cases of bacterial endocarditis. The pneumococcus may cause endocarditis of any degree of intensity, but in over three-fourths it is of the severe or malignant type. The exudate is usually massive, but there is less disposition to ulceration and perforation of the valves than in endocarditis due to streptococci and staphylococci. Endocarditis complicating pneumonia is almost always due to the pneumococcus, but may be due to other bacteria. Pneumococcus endocarditis is much more often left- than right-sided, but the tricuspid and pulmonary valves are affected about four times as much as in endocarditis in general. The aortic valves are attacked more often than the mitral, and twice as often as in infection by other organisms. The mitral valve is affected only half as often, the tricuspid twenty times as often as in miscellaneous infections. Infarcts occur in about half the cases; meningitis in about sixty per cent of all cases. Pneumococcus endocarditis is relatively twice as common in females as in males. It complicates pneumonia much more frequently after thirty years of age than before. An old heart lesion favors its development. The clinical picture of pneumococcus endocarditis does not differ from that of endocarditis due to other causes. The endocarditis may develop before, during or after the pulmonary involvement, but the pneumococci may infect the endocardium without there being at any time involvement of the lung. A considerable number of cases show a period of normal temperature between the fever due to the pneumonia and that due to the endocarditis. This afebrile period is rarely longer than a week and is usually only three or four days. The endocarditis may be afebrile. The duration varies from a few days up to months. The pulse is usually rapid and irritable, but bradycardia is more frequent than in other forms of acute endocarditis. Subjective symptoms referable to the heart are usually absent, except in cases where there is an old heart lesion, where they are due to the old rather than to the fresh endocarditis. Physical signs of the endocarditis are often entirely lacking. Signs and symptoms from other organs are either those common to infectious processes or are due to infarcts, in which case they vary with the size and site of the infarct. Leucocytosis is frequently absent. Blood culture carefully and perhaps frequently repeated, will show the pneumococci. The diagnosis is difficult, or, in rapidly fatal cases developing pneumonia, impossible. Endocarditis should always be suspected in a case of pneumonia which is followed by an irregular temperature not sufficiently accounted for by some other complication, such as empyema. The prognosis is extremely grave, for sixty per cent of cases have complicating meningitis, but it is probable the percentage of recovery is higher than the reports so far published would lead one to infer. [One of the author's cases ended in recovery]. The treatment consists in rest, absolute rest, with supporting food and stimulation as required."

SURGERY.

By HENRY O. WALKER, M. D., Detroit, Michigan.
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AND
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LECTURER ON SURGERY AND DEMONSTRATOR OF SURGERY IN THE UNIVERSITY OF MICHIGAN.

SHOULD THE NORMAL APPENDIX BE REMOVED WHEN THE ABDOMEN IS OPENED FOR OTHER REASONS?

O. A. Gordon, M. D., of Brooklyn, New York (*Brooklyn Medical Journal,* November, 1904), says that the diversity of opinions held by a number of equally good surgeons on this topic, suggests it for discussion. While one operator finds only twenty-seven normal appendices in six hundred operations, another of equal experience has found only two to four per cent abnormal. If the latter made a mistake, a number of those left behind should return for operation. The writer has never had occasion to operate for appendicitis where the abdomen had been previously opened. There certainly is additional risk and a death rate where the surgeon makes a practice of always removing the appendix in abdominal operations. In pelvic operations search for the appendix may spread infection. The claim that the appendix is more liable to trouble in the female because a portion of its blood supply is lost by cutting Clado's ligament when the ovary and tube are taken away is hardly warranted, for appendicitis would occur in a certain number of cases where the appendix was left behind.

The writer believes that secondary involvement of the appendix in disease of the pelvic organs will readily be detected by adhesions.

When at such operations it appears to be normal or an extended search must be made for it, the appendix should not be removed. The removal of the normal appendix has a normal death rate that should be observed. The paper contains extracts from letters written by a number of prominent surgeons supporting his views.

GYNECOLOGY.

BY REUBEN PETERSON, A. B., M. D., ANN ARBOR, MICHIGAN.
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STERILITY DEPENDING UPON RETRODISPLACED UTERI, AND THEIR RELIEF BY THE ALEXANDER OPERATION.

HERMAN E. HAYD, M.D., says, in discussing this subject (*American Journal of Obstetrics,* November, 1904), that sterility is due either to the displacement or to the associated catarrh. Both factors are responsible. Married life which has been unfruitful for years often becomes fruitful when a retrodisplaced uterus is corrected, whether by mechanical or operative measures. The Alexander operation is successful in well selected cases.

The author reports twelve cases in which the Alexander operation was performed where pregnancy and parturition had taken place. The uterus remained in position after each confinement. Three of the twelve cases have had two children; one had three children; one had one large male child delivered by forceps. One operation was done in the second month of pregnancy. One case became pregnant one month after the operation. The result was good in each of the twelve cases. C. L. P.

INJURIES TO THE RECTUM CAUSED BY GYNECOLOGIC EXAMINATIONS.

HOWARD A. KELLY, M. D., (*Journal of the American Medical Association,* November 26, 1904.) Of all the avenues of investigation of the pelvis, it is the rectum which is the most delicate, and most liable to serious injury. Four cases are reported in which the coats of the bowel were perforated by the examining finger, which was thrust through the rectum and into the peritoneal cavity. This complication is more frequent in elderly women, these four cases averaging about fifty-seven years.

The proper treatment is to open the peritoneal cavity immediately and carefully suture the rent from the peritoneal side. Two layers of fine silk sutures should be used. A washed-out iodoform gauze drain should be inserted through the vaginal vault. The posterior culdesac is the most convenient avenue unless the abdomen is to be opened for other reasons. After such an operation the patient ought to receive no other food than albumen water for from five to seven days. The anal orifice should be dilated and if possible a rectal tube inserted to carry off gases and keep the parts at rest.

To avoid such injuries to the rectum it is well to empty the bowel before the examination, place the patient in the knee-chest position and insert a speculum to baloon the bowel with air. On returning the patient to the dorsal position the rectum will be found expanded.

The utmost gentleness should be used. The examiner should avoid the natural impulse to invaginate the wall of the rectal ampulla. Seek out the "third sphincter," the rectal valves, behind the cervix. The finger ought to be introduced between these anatomic structures and then up into the pelvis, where the bowel lies in its natural relation in contact with the posterior surface of the uterus and the left broad ligament. C. L. P.

OBSTETRICS.

By WILLIAM HORACE MORLEY, PH. B., M. D., ANN ARBOR, MICHIGAN.
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AND
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THE HEMATOM-MOLE: ITS CLINICAL AND PATHOLOGICAL CHARACTERISTICS AND RELATIONS TO EARLY HYDRAMNIOS.

IN the *American Journal of Obstetrics* for October, 1904, Taussig adds one more case to the forty-two previously reported. Hematom-moles are found most frequently in women from twenty-five to thirty-five years of age, and in most cases a large number of pregnancies have preceded.

The patients usually give a history of missed abortion. On examination the uterus is found enlarged, softer than a normal uterus and harder than a pregnant uterus of the third month. Uncomplicated cases are not tender on palpation. A differential diagnosis must be made from delayed abortion, hydatid mole and myomatous uterus. The treatment consists in the evacuation of the uterine cavity.

Depending probably upon the state of development of the placenta at the time of the hematom-formation, can be distinguished two classes of these moles. In one the hematomata are found scattered about the entire surface of the ovum and in the other, the placental site being already clearly defined, the hematomata are limited to this area. They vary in size from a cherry to an apple, and occasionally are joined into a complex group. Of special interest is the disproportion between the ovum and the embryo. The former varies in its greatest diameter from six to ten centimeters, and the amniotic cavity is usually only slightly smaller than this, so that it is out of all ratio to the little embryo, which is anywhere from seven to twenty millimeters in length. In a number of cases reported no trace of fetus or umbilical cord could be found. In a very careful microscopic study of two of Taussig's cases no evidences were discovered of an anomaly that could account for the premature death of the fetus.

The disproportion between the size of the ovum, the surface area of the membranes, and the length of the embryo is explained by assuming that a growth in the membranes has taken place. Taussig is of the opinion that the amniotic fluid increases in quantity during the growth of the membranes so that a secondary hydramnios-ovum is formed.

Taussig concludes that the hematom-mole is a form of "missed abortion," in which the uterine retention lasts usually from six to eleven months; in which not merely the ovum as a whole but also the amniotic cavity and the fetal membranes that at points lie in folds, is proportionately very large in contrast to the minute embryo, and in which there are found subchorionic hematomata varying in size and number, usually of a tuberous or polypoid shape. The growth continues up to a certain point. The ovum is retained. The amniotic fluid is then gradually absorbed and the ovum as a whole shrinks somewhat in size. By the negative pressure thus produced folds or invaginations of the membranes arise which become filled with the blood circulating in the intervillous spaces. By continued absorption of the fluid, together with a certain degree of stretching of the membranes by the blood-clots, a hematoma is formed. In this process the insertions of the villous stems act as fixed points. If the stems are close together a hemispherical or broad-based hematoma results; if far apart, a tuberous or polypoid hematoma.

H. S. M'G.

LARYNGOLOGY.

BY WILLIS SIDNEY ANDERSON, M. D., DETROIT, MICHIGAN.
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LITHEMIC NASOPHARYNGITIS DUE TO SYSTEMIC DISTURBANCES.

J. A. STUCKY (*Journal of the American Medical Association,* October 15, 1904) means by lithemic nasopharyngitis that type of disease having a close relationship to rheumatism, or the so-called lithemic diathesis. It has its origin in autointoxication caused by the absorption of by-products from the intestinal tract, or in the faulty metabolism occuring in the liver. It may be defined as an acute congestive rather than an inflammatory process. Stucky does not believe in local treatment, but advocates the thorough cleaning out of the alimentary canal. The patient is put on a restricted diet and plenty of water given, an average of six ounces every hour. A dose of calomel and salol, five or ten grains each, is given, followed in six hours by a saline. One hour before the evening meal the colon is flushed with two or three quarts of soapsuds by means of a colon tube. Three or four hours later eight ounces of warm olive oil is injected and retained during the night. Attention is given to the diet and the use of alcoholics.

MALIGNANT DISEASE OF THE LARYNX.

D. Bryson Delavan (*Medical Record,* September 17, 1904) discusses the following methods of treatment: (1) Internal medication; (2) antitoxins; (3) liquid air; (4) ligation of the carotids; (5) *x*-ray; (6) ultraviolet, and high frequency rays; (7) radium; (8) surgical methods, a—endolaryngeal; b—extralaryngeal. The first four are passed over as of no value. The *x*-ray is spoken of as disappointing, but still of value in relieving certain symptoms, such as pain, excessive secretions and fetid conditions. The endolaryngeal removal of tumors is not advised. The extralaryngeal methods are taken up and discussed.

* * *

James E. Newcomb (*Medical News,* September 24, 1904) reports the case of a woman, aged thirty, who had an abnormally long styloid process projecting into the tonsil. In operating upon the tonsil the tip was removed accidentally. Other cases appearing in literature are cited.

CHRONIC NONSPECIFIC LARYNGITIS.

It is now a generally accepted principle in medicine that in order to successfully treat a diseased condition we must seek first to remove the underlying cause if possible. In recent years special attention has been given to the prophylactic and hygienic treatment of diseases. While the importance of causation has been recognized as applied to many diseases, sufficient attention has not been given to the factors which produce changes in the mucous membrane of the upper air-passage. Many have been content to treat merely the local lesion without seeking the underlying cause.

In chronic nonspecific laryngeal affections we find very frequently that nasal breathing is not free. Mouth breathing in itself leads to laryngeal and bronchial irritation. Other factors are badly ventilated rooms, tobacco, alcohol, the inhalation of dust and the improper use of the voice.

In an article by Albert Rualt on "Chronic Nonspecific Laryngitis" (*Annals of Otology, Rhinology and Laryngology,* June, 1904), the author recognizes these various factors. He gives first the histologic changes which take place in the various forms of nonspecific laryngitis and then considers the etiology and general pathogenesis. Under the latter heading he mentions insufficient nasal permeability, ozena, hypertrophy of the uvula, and extension from a chronic tonsillitis. He also considers the influence of habits, occupations and general diseases as factors in causing laryngitis. The symptoms and the laryngoscopic appearances of the catharrhal and the hypertrophic forms are given. Treatment both general and local is considered. The bicarbonate of soda in doses of six to twelve grams per day is recommended. The benzoate of soda is considered by the author as almost a specific in the congestive and catharrhal states, in daily doses of four to five grams for children and six to ten grams for adults. Mention is also made of thermal medication and external massage.

Local treatment by inhalations, or sprays, of tincture of eucalyptus and tincture of benzoin, oil of pine and menthol, as well as intratracheal injections are advised. Topical applications of iodin are recommended. For the more marked thickenings and nodular conditions chemical and thermal cauterizations, curettage and excision by means of the cutting forceps are advised.

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY. M. D., Ann Arbor, Michigan.
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PARASITIC SYCOSIS COMMUNICATED FROM CATTLE.

The December number of the *Journal of Cutaneous Diseases and Syphilis* contains a paper under the above title by Doctor William F. Breakey, which was read before the American Dermatological Association at Niagara Falls, reporting cases of parasitic sycoses, clinical and private, all directly traceable to cattle or other domestic animals, and giving the history of outbreaks in herds of cattle, after the addition of a single infected animal bought from drove, the disease spreading to neighboring herds as well as to persons handling and taking care of the herds, together with members of their families and in some cases extending to horses. In two of these patients—men—the disease had invaded the subtegumentary tissues on the bearded face, producing thickened brawny swelling, crusted nodular masses, furuncular abscesses, and burrowing sinuses.

Inquiry through physicians, members of the State Veterinary Board and others showed this disease to be quite prevalent in different parts of this and other states, one intelligent farmer writing that "during the winter this disease is common among cattle through this section, lasting from one to two months. * * * It appears on cattle mostly on the head and neck. * * * Under treatment it is easily killed with turpentine, tincture of iodin, or sulphur and lard." The Secretary of the Michigan State Veterinary Examining Board, writing from Arizona, says "There is an alarming amount of this trichophyton tonsurans in cattle of the west and the Bureau of Animal Industry is beginning of late to take action regarding its extermination." The facts learned in an incidental and hurried effort covering different regions indicate a rather widespread territory in which cattle and other domestic animals are affected by various forms of skin parasites, and that probably some of them have at the same time both vegetable and animal parasites, tinea, and sarcoptes, as well as pediculi.

The reports of the Government Bureau of Animal Industry give much valuable information concerning diseases of cattle, particularly those communicable to their kind, but have almost no information concerning those communicated from domestic animals to man. The so-called "Texas itch" is frequently heard of in various parts of the country, and it is not improbable that the eczematous dermatitis going by that name is one of the results of infection from cattle or other animals, and in seeking the origin of a case of parasitic disease of the skin, the possible infection from the lower animals should not be overlooked.

We know that cats and dogs have and convey diphtheria, rats carry the plague, flies carry the germs of typhoid, mosquitoes serve as intermediary hosts of malaria, elephantiasis, et cetera, but it seems that the dangers of disease communicated from the lower animals is not wholly as to systemic diseases, but that parasitic diseases of the skin are also communicated probably much more frequently than has heretofore been thought, and quite often enough to furnish grounds for the growing belief that most, if not all, the parasitic diseases of the skin have had their origin in the lower animals.

* * *

Among the interesting comments made in the dicussion, Doctor Grover W. Wende mentioned reports of a number of such cases which had occurred in Olean, New York. The lesions when seen represented the kerion form, affecting the beard, subcutaneous abscesses resulting. Microscopic examination showed that it was due to the megalosporon endothrix.

Doctor Gilchrist said that it was interesting to note in connection with these parasitic sycoses that the fungi were often pus-forming organisms. In one instance he injected a pure culture of one of these parasites into the arm of a man who offered himself for experiment, and produced pustular lesions from which he again obtained pure cultures of the organism. He again inoculated the man from this second culture and again produced pustular lesions. This experiment showed that the pus was formed by the organism, and was not due to secondary infection. Referring to a number of cases seen at the Johns Hopkins Dispensary, usually children, the lesions were diagnosticated as impetigo contagiosum of the scalp, and consisted of scattered pustular lesions covered with a yellowish scab. He made some cultures from these lesions, expecting to obtain the streptococcus or the staphylococcus albus or aureus, but was surprised to get a pure culture of large-spored trichophyton. Another phase of the trichophytic disease was seen often as scattered dandruff-like lesions in children, and he taught his students to regard all cases of what appeared to be dandruff on a child's head as being suspicious of ringworm.

Doctor Frank H. Montgomery asked Doctor Breakey if he found the trichophyton in the lesions on the face as well as on the scalp, saying that in cases he had seen he had investigated a large number of superficial lesions on the face; in a few he found the trichophyton and in a large number staphylococci.

Doctor Charles J. White said the observations reported by Doctor Gilchrist were new to him and very unusual. * * * The ectothrix was pyogenic in itself without the addition of any other organism. * * * He thought it surprising how easy the cattle described by Doctor Breakey got rid of their ringworm.

Doctor Francis J. Sheppard had seen quite a number of cases of this affection occurring in grooms that were infected by horses. * * * There was at present an epidemic of ringworm of the scalp in Montreal and in these cases he found the disseminated dandruff with an occasional broken hair but no bald patches.

Doctor Ravogli said that in Professor Hebra's clinic many cases of scabies had been reported, where the patients had been infected by attending the camels in the menagerie in Schönbrun. * * * He had also seen cases of itching sensation in individuals who had to do with dogs and other domestic animals, where the affection was not clearly scabies, and yet they got rid of the itching and of the eruption after rubbing on ointment contrascabicem.

Doctor Gilchrist said that some rabbits in the Johns Hopkins Pathological Laboratory became affected with some disease about the nose, which upon investigation proved to be different from the type attacking man. One peculiarity about these parasites was that they were all arranged in pairs.

Doctor Hartzell cited the case of a farmer from New Jersey who presented himself at the University Hospital with a large patch of inflamed follicles on his forearm, which he said he had contracted from a calf, throwing upon the table the ear of the calf which he had brought with him! It was almost devoid of hair and covered with numerous scaly patches. He found an abundance of trichophyton in the follicles of the ear. The man stated that the disease was comparatively common in his neighborhood.

Doctor Breakey, in closing the discussion, said that in some of these cattle affected with ringworm he was informed that recovery was spontaneous and prompt, particularly when freed from the confinement of the stables and danger from reinfection. The opportunity to roll in dry earth might have had something to do with their recovery without other treatment.

PSYCHIATRY.

By WILLIAM M. EDWARDS, M. D., Kalamazoo, Michigan.
MEDICAL SUPERINTENDENT OF THE MICHIGAN ASYLUM FOR THE INSANE.

SOME MEDICOLEGAL ASPECTS OF INSANITY.

The occurrence of medicolegal questions in connection with cases of real or alleged insanity is of sufficient frequency to happen in the practice of many physicians not experts. Such questions are often raised when money considerations are involved and the testementary capacity of aged persons is attacked. Mental alienation is so often made an excuse for crime that the public has come to speak of such pleas rather lightly as "the insanity dodge." In dealing with those accused of crime it is more than probable that errors are made in both directions and, in response to public clamor or for other reason, insane individuals are convicted on criminal charges and sane persons are dealt with more leniently than would otherwise be the case after making a plea of insanity.

Doctor Charles Mercier discussed the question of "Insanity and Responsibility" before the section on Psychological Medicine of the British Medical Association (*Medical News,* November 19, 1904) at its late Oxford meeting. The contention of his address was that the intent to do wrong was essential to guilt. The constituents of this intent were, first, harm done with no intention of obtaining gratification by the doing is not wrong and not punishable. Second, provocation or threat justifies retaliation in such measure as will prevent the threatened injury. Belief in such threat may be just and true, a sane mistake or an insane delusion. Third, the harm must be done wilfully or there is no wrong done. Doctor Mercier views the subject in some new lights.

Doctor John Punton (*Medical News,* October 15, 1904) discusses the responsibility of the insane for criminal acts. He raises the question of graduated responsibility in insane and concludes with Doctor Mercier that "very few of the insane are wholly irresponsible." He says "the man who yields to his desire is vicious whether he be insane or not; but a man who acts in response to the dictates of a diseased judgment is conscientious whether he be insane or not." He divides the insane into those dominated by desire and those dominated by diseased judgment, the one vicious the other conscientious; the one responsible the other irresponsible. As an outgrowth of the discussion of Doctor Punton's paper the American Medico-Psychological Association, before which it was read, appointed a committee to frame the conclusions of the association in a set of resolutions. These may later be brought to the attention of the legal profession.

Doctor Henry R. Stedman (*American Journal of Insanity,* July, 1904), in some conclusions in an article on a case of well poisoning advocates a law placing obscure cases in an asylum for observation, on the request of the examining physicians, by the judge of a court before which a person is to be tried for whom a plea of insanity has been made. This would affect those who temporarily conceal their delusions, malingerers and notorious capital cases wherein popular clamor would be silenced lest the accused escape through the plea of insanity.

Some well formulated expression of the concensus of opinion of the medical profession is desired by the courts rather than individual opinion. Real scientific medical opinion is desired and not the views of pseudoexperts who have become advocates through the agency of a handsome retainer. Those interested in this subject will appreciate the articles referred to when read in their entirety.

THERAPEUTICS.

By DELOS LEONARD PARKER, Ph. B., M. D., Detroit, Michigan.
LECTURER ON MATERIA MEDICA IN THE DETROIT COLLEGE OF MEDICINE

HYDRASTIS: SOME OF ITS THERAPEUTIC USES.

The November 5, 1904, number of the *Journal of the American Medical Association* contains a paper with the heading given above, by W. Blair Stewart, M. D., of Atlantic City. After calling attention to the fact that hydrastis was first made use of by the American Indians for the purpose of dyeing their clothing, and also for the treatment of ophthalmia and chronic leg ulcers, Doctor Stewart gives a brief account of the physiologic action of this drug. Hydrastis, he says, is most active when applied to diseased mucous membranes. Here it restores tone and lessens the mucous secretion. It also has an effect on the controling nerve supply of glands, and by its systemic effect reduces the blood supply of the tissues surrounding the affected part. It is mildly antiseptic. It is also mildly astringent but should not be strictly classed as an astringent. It acts on a torpid liver and increases the amount of bile secreted. It is an abortifacient and should on this account be used with care.

Doctor Stewart finds fluid extract of hydrastis valuable in catarrhal conditions of the stomach and bowels, particularly those forms of catarrh due to the effects of alcohol. He says it is best to begin with one or two drops in water every two to four hours, and to increase the dose gradually to ten or fifteen drops if necessary. Strict supervision of the diet is also recommended in the class of cases referred to.

An aggravated case of delirium tremens is reported, which was treated first with calomel, and also morphin to control excitement, and then with the following mixture:

℞	Ext. hydrastis can., fld	m iiss	18
	Bismuthi subgallatis	gr. iiss	18
	Glycerini acidi carbolici	m ss	03
	Spiritus chloroformi	m iv	24
	Elix. lactopeptin, q. s.	ʒ i	4

Misce. For one dose.

This was repeated every half to two hours and produced most satisfactory results. Strychnine sulphate was also used in this case. On a previous occasion he had treated the same patient for a like condition with the same remedy except that the hydrastis was not included. On this occasion the results were not satisfactory.

The drug in some instances causes diarrhea but this effect usually soon disappears.

For local use Doctor Stewart says glyceritum hydrastis is probably the best preparation. Of the conditions favorably affected by its local use mention is made of vaginitis, chronic or prolonged specific urethritis, and chronic nasal catarrh. In cases of catarrh the drug should be used in the strength of one part hydrastis to three or four parts of water and applied as a spray.

The active principle hydrastininæ hydrochloras, in doses of from one-fourth to one grain internally, is said by Doctor Stewart to be valuable in the treatment of menorrhagia, epistaxis, hemoptysis, hematemesis and hematuria.

EDITORIAL COMMENT.

THE ETIOLOGY OF SMALLPOX.

The views of Councilman and his associates concerning the etiology of variola have already been noted in these pages. It will be remembered that they regard the Guarnieri bodies as protozoan parasites and claim for them a double life cycle, one cytoplasmic and the other intranuclear. This cycle was further elaborated by Calkins into a very complicated series of developmental forms, some of which he regards as constituting a sexual cycle. The latter observer is wholly confident as to the protozoan nature of these bodies, is decided in his interpretation of the various forms, and the supposed parasite has been classed as *Cytoryctes variolæ, Guarnieri.* Since the publication of these papers early in 1904 a number of relatively unimportant articles have appeared in foreign journals the general trend being to show that the Guarnieri bodies are the results of cytoplasmic degeneration and not parasites. In the October number of the *Journal of Medical Research* Howard and Perkins practically repeat the studies made by Councilman and his associates without adding anything to their descriptions. They conclude that the bodies in the skin lesions of variola as described by Councilman and his coworkers represent stages in the life cycle of a protozoan parasite. They further confirm all the stages of the cycle made out by Calkins except the invasion of nuclei by gemmules and their development there into male gametocytes. They recognize a primary and a secondary cytoplasmic and a primary and a secondary intranuclear stage. The end forms of these stages are: (a) the gemmule; (b) large solid nucleated forms—the zygote-like body of Calkins; (c) small ring-like spores in both the intranuclear stages. Finally, the relation of these parasites to the skin lesions is of such a definite and intimate character as to justify them in the conclusion that they are the cause of the disease.

* * *

In the November number of the same journal Ewing presents a very rational and unprejudiced discussion of the evidence for and against the parasitic nature of these bodies. As his studies do not offer any conclusive evidence of the true nature of these bodies he is content with stating some of the most important facts observed. Though these facts on the whole strongly favor the view that these bodies are products of cytoplasmic degeneration he with wisdom will not at the present time claim absolute certainty for this opinion. The most important of these facts may be stated as follows: Since the specific vaccine body shows in many instances definite connections with the cytoplasm of the epithelial cell it is most probable that the body is a part of the cytoplasm. There appear to be numerous transitional forms between the specific vaccine body and other homogeneous globules in the cells which can be produced by diphtheria toxin. The form, size and structure of the vaccine body are so irregular as to suggest the cycle of a degenerative process rather than that of a living microörganisms. The criteria commonly required by zoölogists for the identification of protozoa have not been demonstrated for the vaccine body, namely, nucleus, spore-formation and multiplication. The general histology of vaccinia shows that an active diffusible toxin similar to that of diphtheria is at work in the process from its beginning, but the production of such toxins is not the rule with protozoa. The comparative study of the action of vaccine on different animals shows that the same general process and, in many respects, the same peculiar intracellular changes are produced in widely different classes of animals, and suggests that the vaccine body is a particular form taken in some warm-blooded animals of a universal property of degenerating epithelial cells.

* * *

Regarding the intranuclear bodies the present data are insufficient to warrant positive conclusions either for or against the protozoön theory. Certainly the intranuclear rings of Councilman are very definite structures and have so much of the general appearance of protozoa as to at once establish a suspicion that such is their real nature. Ewing, however, points out some of the difficulties encountered in the attempt to interpret the nature of these bodies. The behavior of the intranuclear bodies under different fixatives and stains is unsatisfactory for the protozoön hypothesis. In general the staining reactions are identical with those of certain nuclear elements, namely, nucleoli and linin droplets. In pure variolous tracheal lesions fixed in formalin all the intranuclear bodies present seem clearly identical with degenerating nuclear elements. With Zenker's fluid and Borrel's stain there are satisfactory transitional forms from homogeneous linin globules which have no resemblance to protozoa, up to large vacuolated bodies regarded as belonging in the cycle of the variola parasite. The intranuclear rings seem to occur only at a particular stage, not initial, of the necrosis of squamous epithelial cells. The intranuclear cycle is imperfectly represented in specific lesions of mucous membranes and may be entirely missing in the cutaneous necrosis of rapidly fatal secondary hemorrhagic cases. On the other hand, it must be said, that the full series of these bodies seems to occur only in variola, and only individual forms seem to be duplicated, and these imperfectly in other lesions.

Ewing's paper is refreshing in its calm statement of facts and in its admirable conservatism. He states the position exactly as we find it at the present moment and is not led by any unscientific enthusiasm to commit himself to an extreme position either against the parasitic theory or for the cytoplasmic. Summing up the whole the main facts are these: In the lesions of variola there are found peculiar bodies to some extent resembling protozoa and apparently occurring in a definite series. Similar forms occur individually in other conditions. In their general morphology, staining reactions and cytoplasmic relations these bodies also suggest very strongly cytoplasmic degeneration products. Between these two views we stand at present and there is no absolutely convincing proof offered of either. When such well-known investigators reach such different conclusions from exactly the same data it becomes evident that we have reached the limits of our present technical methods and that more conclusive modes of investigation must be sought. The evidence at present offered is wholly morphological. Something more is needed. It does not seem to us that the possibilities of culture-methods have been exhausted to the same extent as those of the staining dish. The cultivation of amebæ and trypanosomes should encourage vigorous zeal along cultural lines in those conditions for which some workers so confidently assert a parasitic etiology.

A. S. W.

CONTEMPORARY.

PRIMITIVE MEDICINE.

[SAINT LOUIS MEDICAL REVIEW.]

WITH the passing of the American Aborigines the records of their habits and customs increase in historical value and appreciation. In the *Medical Record* of August 20, Doctor E. J. Kempf, of Indiana, quotes at length from the writings of Rush concerning Indian medicine. Their first food was their mother's milk. To harden them against cold, infants were plunged into cold water. To facilitate their being moved and to preserve their shape they were tied to a board for six to eighteen months. The mother suckled her child two years, during which time she refused the embraces of her husband.

The Indians had no set time for eating, but obeyed the gentle appetites of nature as often as they were called by them. Their diet was of a mixed nature, both animal and vegetable. After whole days spent in the chase or war, they often committed those excesses in eating to which long abstinences could not fail of prompting them. It was a common thing to see them spend three or four hours in satisfying their hunger. This, however, was occasioned not more by the quantity they ate than by the pains they took in masticating it. It was also a practice amongst the Indians never to drink before meals, when they either worked or traveled. They were much given to the cold bath, to painting of the face and body, and to dancing. It was a remarkable fact that there were no deformed Indians, except those injured by the accidents of the chase and war.

The Indian woman menstruated at a late period of life, between the eighteenth and twentieth year, had easy labors, and there was hardly a period in the interval between the eruption and the ceasing of the menses in which they were not pregnant or giving suck. The custom of late marriages among the Indians is assigned as a cause of the considerable vigor enjoyed by them, and of the more certain health of the suckling child.

The diseases prevalent among the Indians consisted principally of fevers, and diseases produced by cold, such as pleurisy, pneumonia, rheumatism, et cetera, also dysentery. Smallpox, measles, tuberculosis, et cetera, are diseases contracted by the intercourse of the Indians with the Europeans. Scurvy was unknown to them, so also gout, insanity, and nervous disease, until the White Man taught him to drink alcoholic liquors. The Indian never was afflicted with intestinal worms, and the periods of dentition in infancy and childhood were unaccompanied by disease.

The remedies of the Indians, like their diseases, were simple and few in number. When sick the Indian refused all kinds of stimulating aliments, but was allowed to drink plentifully of cold water.

Sweating was much used by the Indians, and their mode of procuring this evacuation was as follows: The patient was confined to a close tent or wigwam, over a hole in the earth, in which a red-hot stone was placed; a quantity of water was thrown upon the stone, which instantly involved the patient in a cloud of vapor and sweat; in this condition he rushed out and plunged himself into a river, whence he retired to his bed.

Purging and vomiting were also in vogue among the Indians. American ipecacuanha being used for the latter purpose. Bleeding, which was produced by means of sharp stones and thorns, they confined entirely to the part affected. The Indians employed a caustic in obstinate pains in the following manner: A piece of rotten wood, called punk, was placed upon the part affected and afterward set on fire; the fire gradually consumed the wood, and its ashes burned a hole in the flesh. The treatment of the sick Indian was greatly in the hands of the so-called medicine-man, who frequently relied on amulets and incantations; if not to cure his patients, at least to give them confidence and superstitious trust. The priest and the medicine-man was one and the same, and his chief functions were to make clouds give out rain and to cure those who were seriously ill.

MUSIC AND MEDICINE FOR INTERMITTENT PULSE.

[EPHRAIM CUTTER, M. D., IN AMERICAN MEDICINE.]

As I am informed that there is now being built in Kalamazoo, Michigan, a hospital for the treatment of diseases by music, it is in order to suggest ideas.

An octogenarian gentleman, a graduate of Yale, a leader of a choir, organist, successful music teacher, and factor and at one time a medical student, had an intermittent pulse. We sat side by side at an ensemble concert with an audience of over one thousand persons. As he was accustomed to feel his pulse he was asked during some particularly well-rendered selections from Beethoven to see if his pulse intermitted. He said it did not intermit.

A patient with an intermitting pulse was requested to sing some choice music. He did so. Pulse became regular.

When we consider that music directly strengthens the heart, promotes the excretion of CO_2 gas that specially paralyzes the heart equalizes the nerve circulation, promotes digestion, et cetera, these two instances are not so strange. But it is very doubtful if such musical therapy is prescribed. It seems as if it ought to be, and music thoroughly tested to see if these cases are confirmed. It does not need a hospital to do this nor even a doctor. The Reverend Peter Kimball, who died at the age of ninety-nine, said that when eighty-six years old he used to quiet palpitation of his heart by drumming on a drum with drum sticks.

MEDICAL NEWS.

A MOVEMENT TO ERECT A MEMORIAL.

The Baltimore City Medical Society recently inaugurated a movement to dedicate a memorial to Doctor William Osler, who will leave this country in June to become regius professor of medicine at Oxford University. The project contemplates the erection of a library building in Baltimore to cost about one hundred thousand dollars. Ten thousand dollars has already been contributed by Baltimoreans, and committees have been formed in Cleveland and Philadelphia to swell the fund to the desired amount. The chairman of the national committee now being formed is Doctor John H. Musser, of the University of Pennsylvania. The national secretary is Doctor Henry Barton Jacobs, of Baltimore, and Governor Warfield, of Maryland, will officiate as national treasurer.

PROBABLE SUCCESSOR TO PROFESSOR OSLER.

Doctor Lewellys Franklin Barker, professor of anatomy in the Rush Medical College of the University of Chicago, and formerly of the Johns Hopkins University, is mentioned as the probable successor to Doctor William Osler. The appointing power is vested in the trustees of the University and the advisory board of the medical faculty of the institution, the choice virtually resting with the latter, which is composed of President Ira Remsen, Doctor William Osler, Doctor William H. Welch, Doctor Henry M. Hurd, Doctor Howard S. Kelly, Doctor William K. Brooks, Doctor William S. Halstead, Doctor John J. Abel, Doctor William H. Howell, Doctor Franklin P. Mall and Doctor J. Whitridge Williams. Doctor Barker, the prospective appointee, is a Canadian, having been born in Norwich, Ontario, thirty-seven years ago. He received his medical degree at the University of Toronto, where he was house officer of Toronto General Hospital from 1890 to 1891, when he became assistant physician to the Johns Hopkins Hospital, from which post he was promoted to various positions in the University during the ten years following. He is considered one of the foremost anatomists of the country, and is the author of a number of medical and anatomical treatises.

A RARE TREAT.

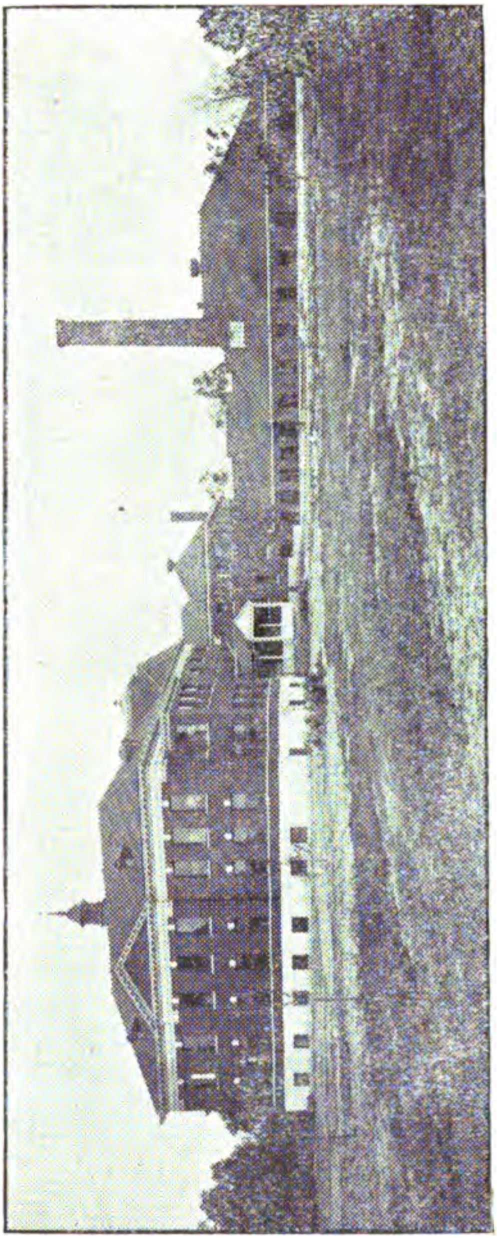
Doctor Emilus C. Dudley, of Chicago, gave the Ann Arbor medical guild a rare treat on the 13th instant—a gynecologic clinic at the University Hospital in the afternoon and an address with lantern slide demonstration at the New Medical Building in the evening. "The Treatment of the Broad Ligaments in Abdominal and Vaginal Hysterectomies" was the subject of the discourse, which was enjoyed by a large gathering, a number of physicians from Michigan cities taking advantage of the opportunity to listen to the eminent teacher and operator. Inasmuch as the paper will be published later an abstract will not be presented here. The discussion, which will also be published, was opened by Doctor Longyear, of Detroit, who prefaced his remarks with a happy reminiscence relating to a bit of illegible chirography that passed between himself and the orator of the evening about twenty-eight years ago. Then Dudley was with Emmet, and Longyear was house physician at Harper Hospital. The latter had occasion to write to Emmet regarding a certain gynecologic case. The letter received prompt reply, the matter of superscription being assigned to Dudley. Unable to read Longyear's signature, however, he hastily summoned a council of distinguished physicians to decipher it, but every man "passed," and finally the suggestion was made that the name be cut out and pasted on the envelope, the idea being father to the expression that "Possibly someone in Detroit may be able to read it!" The suggestion was adopted to the chagrin of Longyear. In recounting his version of the incident Dudley bestowed the compliment that anyone can read Longyear's name now. Doctor Dudley was the guest of Doctor Peterson during his stay in the city.

HACKLEY HOSPITAL.

This institution, the gift of Charles H. Hackley, of Muskegon, was dedicated in that city on November 17. The principal address of the occasion was delivered by President James B. Angell, of the University of Michigan, who was introduced as the "intellectual father of Michigan." The title of the hospital is vested in a board of trustees as a body corporate, but the benefaction is linked with the First Congregational Church to the extent of responsibility for the election of the trustees. The relation of the church to the hospital is simply that of a friendly guardian. In accepting the trust the church does not consider itself in any sense the owner of the property, nor has it any desire

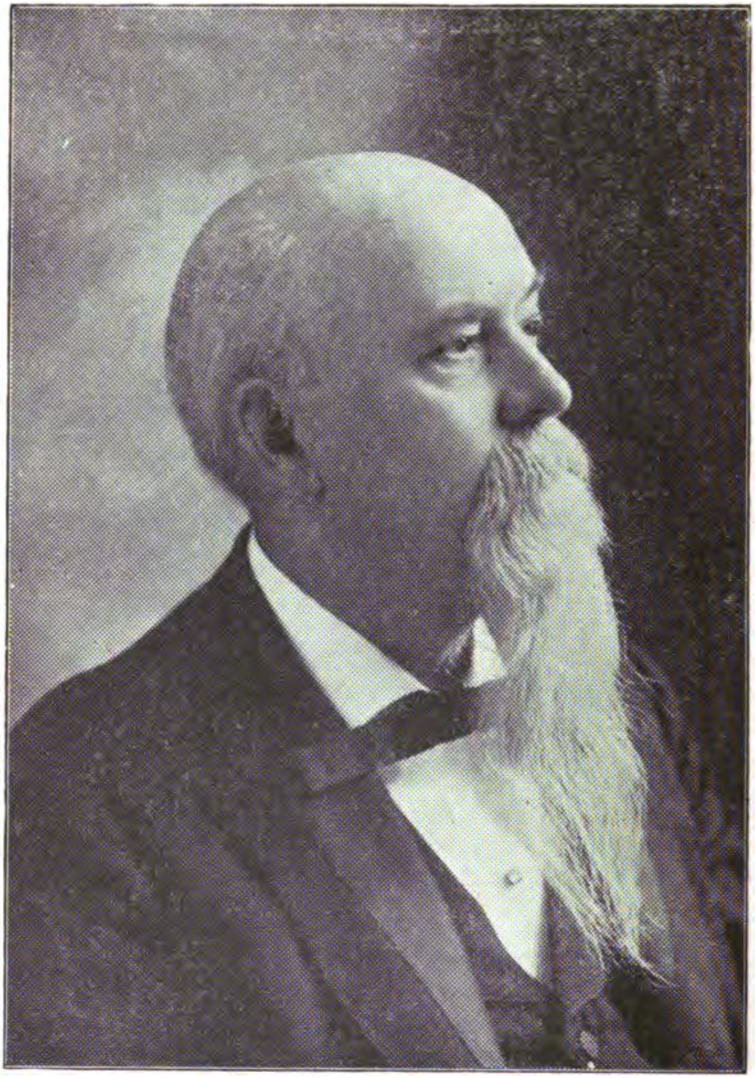
FRONT VIEW OF HACKLEY HOSPITAL.

to convert it into an ecclesiastical institution. The hospital belongs to the people of Muskegon and will be conducted for the relief of suffering humanity, regardless of race, color, class, or creed. The hospital occupies four city blocks which are handsomely shaded by a growth of native oaks.



WEST SIDE OF HACKLEY HOSPITAL.

As will be observed from the illustrations accompanying this article, the hospital is built on the pavillion plan. It has a central administration building which is connected by spacious corridors with the east and west pavillions, wherein are located the wards and rooms for patients. The service building, with kitchen, laundry, power, lighting and heating plant is to the rear of the administration building. The four buildings practically constitute one single fire-proof structure, affording beds for sixty patients. It has a front-



CHARLES H. HACKLEY—Muskegon's Benefactor.

age of two hundred four feet and a depth of two hundred fifty feet, including the service building. The exterior walls are of red pressed brick, with foundations and stone trimmings of Bedford limestone. The roof is of red tile, and the windows are of plate glass. The first floor of the administration building has a large, well lighted lobby in the center, and opening off from this are the trustees' room, the superintendent's offices, the reception room, the microscopic examination room, the doctors' room, and the drug room. To the rear is the emergency operating or ambulance reception room. The second floor of the administration building contains the living rooms for the administrative officers. The third floor contains the main operating room, the septic operating room, surgeons' room, etherizing room, recovery room, nurses' room, *x*-ray and static machine room, and sterilizing room. The first floor of the east pavillion is divided into rooms for private patients, while the second floor contains the maternity ward and the children's ward. The first floor of the west pavillion contains the men's medical ward at the north, and the surgical ward at the south end. Between the two are the pantry, the dining room for convalescing patients, and isolation room for patients critically ill or unmanageable, toilet rooms and the nurses' service rooms. The second floor is similarly arranged and is designed for the use of women. The service department is reached from the administration building through the basement corridor. It contains a dining room for the help, a refrigerator room, diet kitchen and bakery. The laundry and laundry sterilizing room are modern in every respect. There is also an isolation department for contagious diseases, two wards for two patients each, with nurses' rooms, service and toilet rooms, which is completely separated from the hospital proper. There is a hydrotherapeutic department located in the basement of the west pavillion. An automatic electric elevator runs from the basement to the operating room on the third floor of the administration building. A large ventilating fan in the basement drives the warm air into every room in the building, while four attic fans draw the impure air away. The system is supplied with automatic heat regulation. The ventilating capacity is sufficient to give each patient thirty cubic feet of fresh air per minute, and the supply can be regulated according to the number of patients. The plans contemplate a Nurses' Home and Training School, with architectural features in harmony with the main hospital building. This building will cost about eighteen thousand dollars. The morgue is a one-story brick and stone building, eighteen by twenty-four feet, and will cost about two thousand five hundred dollars. It will contain two rooms, one of which will be used as a morgue and the other for autopsy.

* * *

Mr. Hackley has already expended over two hundred thousand dollars on the hospital and grounds, besides presenting a partial endowment of one hundred thousand dollars. Horatio N. Hovey, of Detroit, a former resident of Muskegon, has given the institution five thousand dollars for the endowment of a free bed to be designated "The Elias W. Merrill Free Bed," in honor and memory of his wife's father, a pioneer and respected citizen of Muskegon. Doctor John VanderLaan is chief of the medical staff, which comprises not only physicians of Muskegon but of surrounding towns.

MINOR INTELLIGENCE.

THE Board of Health of Cambridge, Massachusetts, has called the attention of the State Board of Health and the Railroad Commissioners to the imperfect ventilation systems employed in railway coaches. The impression of the board is that the public health is endangered from this cause and steps will be taken to remedy the defect.

THERE are thirty-nine physicians in the French Senate, while there are only two in the United States Senate. The French Chamber of Deputies has in its membership fifty-one physicians, while in the corresponding legislative body in the United States—the House of Representatives—there is not a physician enrolled. The French medical legislators comprise such distinguished personages as Amodru, Barrios, Baudon, Borne, De Lanessau, Dron, Dubief, Meslier, Vazeille, Villejean, Vogeli.

THE Cook County Hospital has been placed under civil service rules through resolutions presented by President Foreman and adopted by the County Board. Henceforth the most prominent physician in Chicago will be required to pass an examination if he seeks appointment as attending physician to this institution. While this may be humiliating to the veteran physician it will facilitate the chances of the recent graduate, notwithstanding the staff has been reduced from one hundred thirteen to sixty-five.

AN attempt to enforce the vaccination law in Rio de Janiero during the past month culminated in a riot which resulted in the death of seven persons and in the injury of about thirty more. The Brazilian city, with a population approximating that of Boston, was infested with over five hundred cases of smallpox during two weeks in November and December, over three hundred persons succumbing. These appalling figures would seem to suggest the necessity for the enforcement of compulsory vaccination.

AN addition will soon be built to the Schuylkill County, Pennsylvania, Asylum for the Insane, the county commissioners having recently asked that plans for an annex be prepared. Conditions existing at this institution have been repeatedly and severely condemned by grand juries and various humane organizations, and the contemplated improvements will be greatly appreciated. As the asylum is now arranged no classification of patents obtains, the mildly and hopelessly insane being confined in the same wards.

THE International Congress of Tuberculosis is taking steps toward the inauguration of preventive legislation regarding the spread of consumption. At a recent meeting of the organization the suggestion was advanced that state and national governments provide not only for the inspection of public schools, but that public buildings, vehicles, and the tenement districts be thoroughly inspected. The statement was also made that beneficial results would be obtained if the tuberculous insane were assigned to special asylums and hospitals.

DOCTOR JAMES G. HYNDMAN, of Cincinnati, died at the Good Samaritan Hospital in that city on Sunday, September 18. The doctor was born in 1853, and acquired his academic and medical education in the Queen City, obtaining a diploma from the Medical College of Ohio before he attained his majority. For a time he served as interne in the Cincinnati Hospital and afterward was appointed to the professorship of laryngology in his alma mater, which position, together with that of secretary of the faculty, he occupied for seventeen years.

DOCTOR S. A. KNOPF, of New York City, has been awarded a gold medal by the Louisiana Purchase Exposition for his work on tuberculosis. The exhibit, which merited the favor of the Superior Jury of Awards, consisted of his English, French, and German text-books on tuberculosis; his contribution to tuberculosis in the "Twentieth Century Practice of Medicine;" his International Prize Essay—"Tuberculosis as a Disease of the Masses and How to Combat It"—with translations in eighteen languages; and various addresses and lectures on the subject.

RECENT LITERATURE.

REVIEWS.

DWIGHT'S EPITOME OF TOXICOLOGY.*

"DWIGHT'S Epitome of Toxicology" is a little book that will find a welcome place in every physician's library. It treats of all poisons in a brief and comprehensive manner. Each poison is described, together with its physiological action, dose, symptoms, treatment, postmortem finding and tests. The latter, however, are purely qualitative. Doctor Dwight is the author of the popular "Epitome of Medical Jurisprudence," which is also one of this series.

*A Manual for Students and Practitioners. By E. W. Dwight, M. D., Instructor in Legal Medicine, Harvard University. In one 12mo volume of 298 pages. Cloth, $1.00, net. Lea's Series of Medical Epitomes. Edited by V. C. Pedersen, M. D. Lea Brothers & Company, Publishers, Philadelphia and New York, 1904.

THE BLUES.*

Doctor Abrams is so well known by many valuable contributions to medicine that a book by him on so important a subject as neurasthenia is sure to attract a large circle of readers. Nor will they be disappointed, even if they do not agree with the author in all his statements, for there is much of value, much that is suggestive and stimulating, not only on splanchnic neurasthenia in its narrowest sense but in various other manifestations of nervous weakness. The addition of several of Doctor Abrams' journal articles on various diagnostic manipulations increases the value of the book.

*(Splanchnic Neurasthenia). Causes and Cure. By Albert Abrams, A. M., M. D., F. R. M. S., et cetera. New York: E. B. Treat & Company, 1904.

THE PHYSICIANS' VISITING LIST FOR 1905.*

This visiting list has been improved by including in all styles the special memorandum page. The book comes well bound in soft pliable leather and can be recommended as a durable and convenient book that the physician will search in vain for points, or lack of points, to find fault with.

*Fifty-fourth year of its publication. Arranged for twenty-five, fifty, seventy-five or one hundred patients a day or week, with pencil, pockets, et cetera. Contains also Calendar, Table of Signs, List of Incompatibles and Directions for Treating Poisoned Persons. Also has Metric System Tables with Directions for Converting to Apothecaries' Weights and Measures. Also a Dose Table and Rules for Comparing Thermometers. Prices range from $1.00 to $2.25. By mail, postpaid, to any address. Philadelphia: P. Blakiston's Sons & Company.

THE SELF-CURE OF CONSUMPTION WITHOUT MEDICINE.*

So much is said about the disappearance of tuberculosis that we are in danger of forgetting it is still one of the most important diseases. The title of this useful little book is happily chosen because it is well established that the healing of consumption is not to be brought about by the prescribing of drugs, but by a course of living in which the active co-operation of the patient is essential. Those who are still unaware of the modern ideas regarding climate, feeding, exercise, the treatment of symptoms, and other details will need more than this book contains. Nevertheless, it gives a great deal, and all so clearly stated and in general so accurate that it will be of great service in teaching patients how to live. It is well printed and its low price will help to give it the wide circulation it deserves.

*With a Chapter on the Prevention of Consumption and other Diseases. By Chas. H. Stanley Davis, M. D., Ph. D. New York: E. B. Treat & Company, 1904.

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